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PHOTO ERA

THE AMERICAN JOURNAL
OF PHOTOGRAPHY

AN ILLUSTRATED MONTHLY
OF
PHOTOGRAPHY AND ALLIED ARTS

VOLUME XIV
JANUARY, 1905, TO JUNE, 1905, INCLUSIVE

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PHOTO ERA

THE AMERICAN JOURNAL OF PHOTOGRAPHY

VOL. XIV

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Contributions relating to photography in any and all of its branches will receive our careful consideration. While not accepting responsibility for unsolicited contributions, we will endeavor to return them if not available, provided return postage is enclosed.

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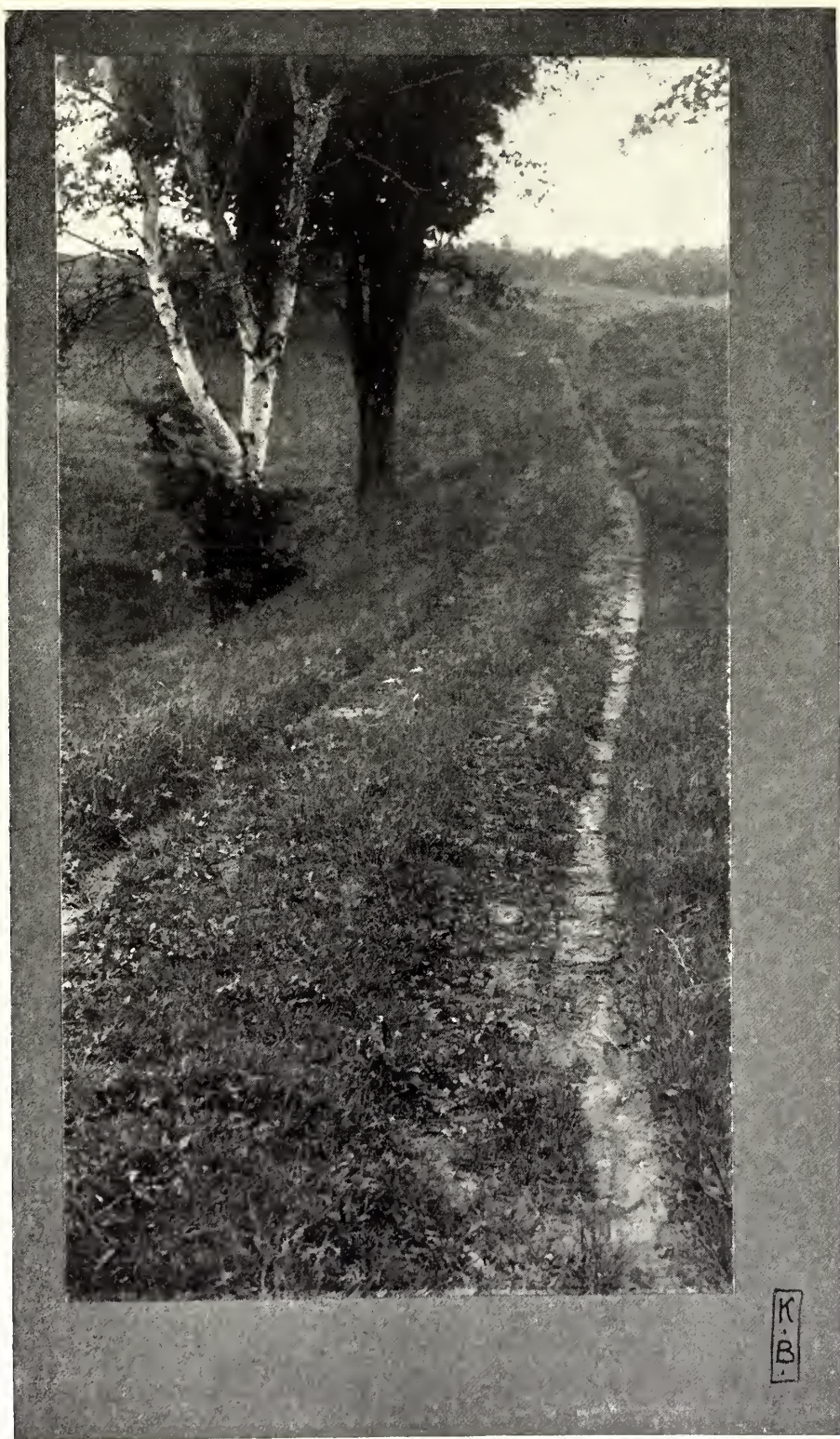
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K.
B.

KATHERINE BINGHAM
THE PASTURE ROAD
FIRST PRIZE, CLASS B



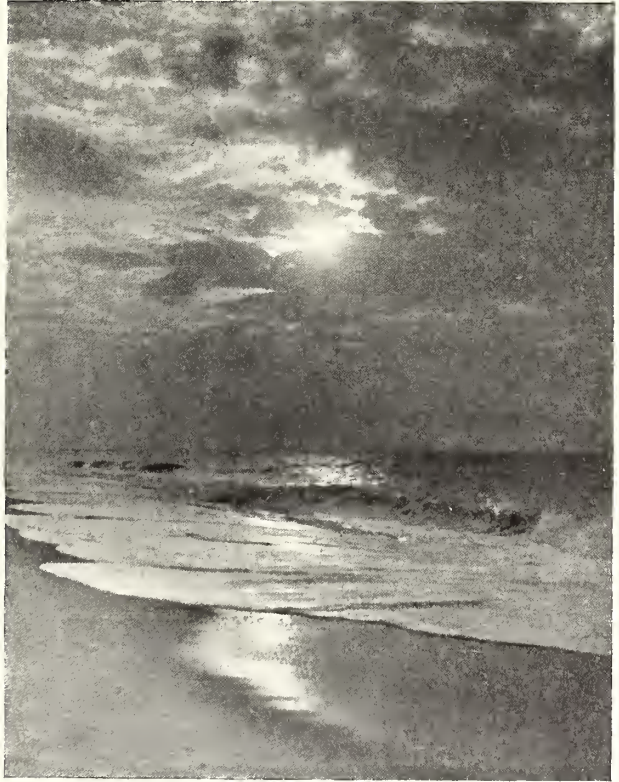
PHOTO ERA

The American Journal of Photography

VOL. XIV

JANUARY, 1905

NUMBER 1



H. W. SCHONEWOLF
A MEMORY OF THE SEASHORE
NINTH PRIZE, CLASS B

OUR THIRD ANNUAL PHOTOGRAPHIC CONTEST

THOMAS HARRISON CUMMINGS

With the opening of the New Year the first task at hand is to record the results of our Third Annual Photographic Contest. With a list of entries surpassing all former records, we have experienced great satisfaction in examining and assorting these pictures with our editorial colleagues. A lapse of taste here and there, or a slight mistake in selection, or the absence of vigor of touch in a few of the pictures submitted has in no way dampened our enthusiasm for this exhibit, but has created in us a finer appreciation for the better work and a more penetrating and effective insight concerning the resources of our craft. Judged as a whole the exhibit leaves an impression of an all-round improvement. There is a general advance in the appreciation of tonal values among the contributors and an almost total elimination of harsh and strong contrasts of blacks and whites, in these pictures. Moreover, it is refreshing and encouraging to find everywhere manifest a strong love of nature, and a disposition to be keenly observant



KATHERINE BINGHAM
MISCHIEF
FIFTH PRIZE, CLASS A

of her various aspects under varying conditions, all of which accounts for the healthy, sane, and strongly original work found in this collection of pictures. The list of awards follows:—

GRAND PRIZE

AWARD

C. F. Clarke, 10 pictures.

HONORABLE MENTION

1. Theodore Eitel, 10 pictures.
2. Katherine Bingham, 15 pictures.
3. W. H. Porterfield, 6 pictures.
4. Wm. H. Zerbe, Jr., 17 pictures.
5. Arthur L. Barrows, 12 pictures.

CLASS A

AWARDS

1. Theodore Eitel, The Newspaper.
2. Mrs. Helen P. Gatch, Lear.
3. Mrs. W. W. Pearce, "Girls Ain't Much."
4. Mrs. Helen P. Gatch, After the Storm.
5. Katherine Bingham, Mischief.
6. Mary G. Huntsman, Blossoms.
7. Albert H. Moberg, "What Will Mamma Say?"
8. C. F. Clarke, Fun for the Boy.
9. Morris Wasserman, Preserves.
10. W. H. Zerbe, Jr., Tillers of the Soil.

HONORABLE MENTION

Arthur L. Barrows, Toil.

Katherine Bingham, La Bella, Laudes Domini,
Portrait Group, So Sleepy.

Mrs. C. J. Campbell, Wild Animals I Have Known.

C. F. Clarke, The Shoemaker.

H. B. Conyers, The Alley Boss.

G. H. Ewart, An American Monarch, Bison.

Dr. C. H. Gardner, Acknowledgment, Blowing
Bubbles.

Mrs. Helen P. Gatch, As the Birds Fly.

Clarissa Hovey, Fairy Tales, Vivian.

Mary G. Huntsman, Dorothy.

Thomas J. Jones, Waiting.

H. W. Kimball, The Sheep Feeding.

Fred T. Loomis, Nearing Home.

Lawrence Macomber, Sheep Study.

Albert H. Moberg, "Never Mind, Mamma Won't
Scold."

W. Schrenpf, Beacon Street, Boston.

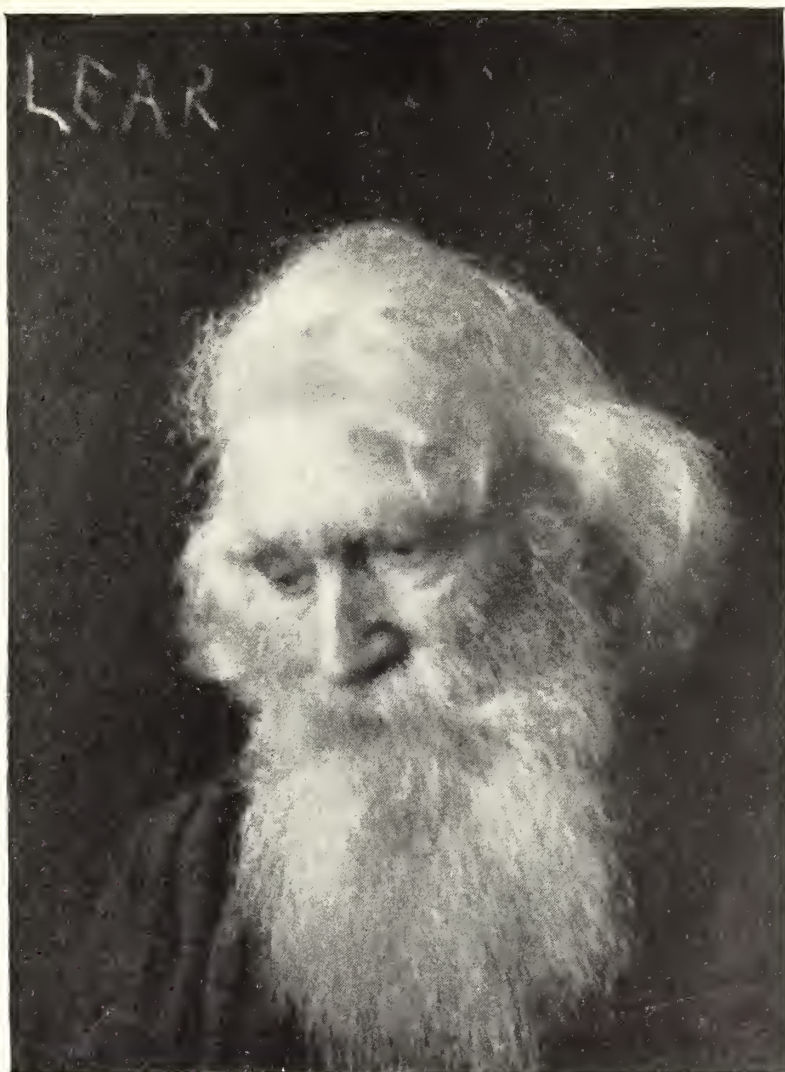
Mrs. J. C. Sheridan, The End of a Day of Toil.

Morris E. Thomas, Character Study.

Wm. L. Van Norte, Turning the Shoe.

Emma L. Williams, Mother and Child.

W. H. Zerbe, Jr., The Seamstress, The Study
Hour.



MRS. HELEN P. GATCH
LEAR
SECOND PRIZE, CLASS A

CLASS B

AWARDS

1. Katherine Bingham, The Pasture Road.
2. C. F. Clarke, Dreary Road.
3. W. H. Porterfield, A Peaceful Valley.
4. T. Edward Schiedt, Evening.
5. Lawrence Macomber, The Glade.
6. Theodore Eitel, The Harvest Field.
7. W. H. Zerbe, Jr., Returning to the Fold.
8. W. H. Zerbe, Jr., Brown October.
9. H. W. Schonewolf, A Memory of the Seashore.
10. Theodore Eitel, Landscape.

HONORABLE MENTION

Arthur L. Barrows, Autumn, Autumn Fruit, The Dunes, The Home of Long Ago.
Katherine Bingham, Lights at Eventide.
W. de F. Brown, Solitude, Surf.

C. F. Clarke, The Valley, Winter.

W. F. Daniell, Jr., Birches, Sugar Maples in January.

Theodore Eitel, Quietude, The Beeches.

John H. Fassitt, The Lake.

Mrs. Helen P. Gatch, Autumn.

Reina A. Lawrence, Poets' Narcissus.

James V. Porter, Autumn Morning in the Woods, The Bend in the Creek.

W. H. Porterfield, A Toiler of the Sea, Flower Study, The Song, Towards Evening along the Niagara.

H. W. Schonewolf, There Is a Pleasure in the Pathless Woods, Under the Trees.

W. Schremppf, At Sunrise in Harbor, Shore at Newport.

Mrs. J. C. Sheridan, Lilacs Lavender.

Mrs. E. E. Trumbull, Sand Dunes in Winter.



THEODORE EITEL

THE HARVEST FIELD

The award of the Grand Prize was made to Mr. C. F. Clarke of Springfield, Mass., for a collection of ten pictures, of which seven were landscapes and three genre. Mr. Clarke's landscapes show great artistic feeling in choice and lighting, and great technical skill in execution. The composition is always admirably simple and well-balanced. The lighting is always effective, and the atmospheric effects desired are obtained in the negative, so that the earth and sky are in full harmony. His genre studies show the same excellent grasp of composition. His photographs are pictures because they contain a single interest, properly placed, and with accessories properly subordinated. Two of these pictures are reproduced in this number, one appeared in December, having been reproduced before its entry in this competition, and others will appear in future numbers.

The other collections which were considered by the judges sufficiently strong for consideration for the Grand Prize are named above in their order of merit. None of them showed the same uniformity of quality displayed by the work of Mr. Clarke. All of them contained work of very high quality, and other pictures of much lower merit. In most cases, if the number of pictures submitted had been reduced to one half, the average of the collection would have been raised very much, and the chance of winning higher rank correspondingly increased. The ability to criticize one's own pictures fairly and impartially is a necessary part of the artist's equipment.

Let us now consider the pictures which obtained the awards for individual merit. Mr. Eitel's "The Newspaper" is a very happy piece of posing, well thought out and consistently executed. The accessories are all in keeping with the Teutonic individual who plays the title rôle, and the picture might be taken in any of a thousand German inns. The picture was taken with a B. & L. Zeiss lens of $19\frac{1}{4}$ inches focal length, working at f. 11, at 9 A.M., on a Seed 26x plate, developed with pyro-soda, and printed on Willis & Clements' KK Platinum paper.

Mrs. Gatch's picture, despite its somewhat unnecessary title, is a magnificently handled piece of portrait work. The pose, expression, and lighting are all extremely good, and the only alteration which we can suggest would be the trimming of some black space away at the left



THEODORE EITEL

FIRST PRIZE, CLASS A

THE NEWSPAPER

and top. The picture was taken with a wide-open Darlot lens, at 10 A.M., on a Cramer Crown plate. The developer was pyro, and the print was made on American Platinum.

Mrs. Pearce's "Girls Ain't Much," which was accepted at the New York Salon, is a charming study of child character, and another fine piece of portrait work. Some minor defects do not detract from the general success of the picture. It was made with an R. R. lens, open stop, in good light at 11 A.M., with 1-5 second exposure. Plate, Cramer Crown; developer, pyro; W. & C. Sepia Platinum paper.

"After the Storm" is again by Mrs. Gatch, but very different in character from her other prize picture. Although the pose seems a trifle unreal, the accurate rendering of values and the admirable placing of the figure render the picture well worthy of its place. The exposure was made in sunlight at 9 A.M., with a Darlot lens working at f. 25. The Cramer Isochromatic plate was developed with pyro, and the print is on American Platinum, mercury developed.

Miss Bingham's "Mischiefs" is another pleasing child study, well handled, and technically as well as artistically good. It was taken with the front combination of a Plastigmat lens of 19 inches focus, with stop f. 4 (?) and $\frac{1}{4}$ second exposure in bright light. Plate, Cramer Crown; developer, pyro; Willis & Clements' Platinum paper.

Miss Huntsman's "Blossoms" is a charming bit of portraiture made under difficult conditions, and exceedingly well done. It was taken with a B. & L. lens of 10 inches focus, stop 4,



C. F. CLARKE
DREARY ROAD
SECOND PRIZE, CLASS B





MRS. W. W. PEARCE
GIRLS AIN'T MUCH
THIRD PRIZE, CLASS A

exposure 5 seconds with diffused light at 4 P.M. Plate, Seed 26x; edinol developer; platinum print.

Mr. Moberg's child study is one of those story-telling pictures which always appeal to the popular taste, and is at the same time a well composed genre study. The attitude of the model is instinctive and natural. The lens was by the American Optical Co., stop f. 8, focal length $13\frac{1}{2}$ inches. The exposure was by flashlight on an Orthonon plate; developer, ortol; and paper, American Platinum.

Mr. Clarke's "Fun for the Boy" depicts truthfully the invincible tendency of a boy with a snow-shovel to get to work wherever he finds snow, regardless of the utility of his efforts. The distance is well handled, and the prim, stiff row of New England cottages becomes almost picturesque by the treatment. The print is an enlargement from a No. 3 Kodak negative, printed on carbon.

Mr. Wasserman depicts another phase of childish activity, the process of imaginary cooking, and does it in a very pleasing fashion. The picture was made with a Goerz lens, of 11 inches focus, instantaneous exposure at f. 8 on a cloudy day at 3 P.M. The Orthonon plate was developed with pyro and printed on Eastman Sepia.

Mr. Zerbe's "Tiller of the Soil" is another print shown at the New York Salon, and possesses undoubted merit in broad handling and good composition, coupled with some faults,



MRS. HELEN P. GATCH
AFTER THE STORM
FOURTH PRIZE, CLASS A

one of which is the confusion of the rear horse. The picture was taken with a Goerz lens of 8 inches focus at f. 16, in 1-50 second at 3 P.M., in good light. The Cramer Isochromatic plate was developed with pyro, and the print is a bromide enlargement made through bolting cloth.

The first prize picture in Class B, Miss Bingham's "The Pasture Road," is an excellent example of simple landscape composition. The trees are properly placed, the perspective of the road is excellent, and the necessary element of slight mystery is added by speculation as to where the road, disappearing behind the trees, leads. The picture is a platinum print made with a Plastigmat lens on a pyro-developed Cramer Instantaneous Isochromatic plate. The exposure was 1 second, with stop 16 at 5 P.M., on a rainy day.

Mr. Clarke's "Dreary Road" is a beautiful gray carbon print to which the reproduction does not do justice. The quality of the snow and the wonderful softness and depth of the shadows cannot be found in the cut, but even this is a beautiful snow scene. The picture was made at 3 P.M., in bright light. The exposure was 2 seconds with a dark color screen, using a Goerz f. 6.8 lens of 9½ inches focus at full opening. The plate was developed with ortol and printed on gray carbon.

"A Peaceful Valley," by W. H. Porterfield, was hung at the New York Salon. It is an effective example of simplicity and massing. The atmospheric values are beautifully defined without injury to the truth of the foreground tones, and the picture is an example of the best



W. H. PORTERFIELD
A PEACEFUL VALLEY
THIRD PRIZE, CLASS B





C. F. CLARKE
FUN FOR THE BOY
EIGHTH PRIZE, CLASS A

in landscape photography. It was taken with a Gundlach lens of $6\frac{1}{2}$ inches focal length, working at f. 32. The exposure was one second at 10 A.M., on a bright day. The Cramer Isochromatic plate was developed with metol, and the print from an enlarged negative was made on Cyko paper.

Mr. Schiedt's "Evening" is a pleasant piece of marine work. It was taken with a Eury-scope lens of $6\frac{1}{2}$ inches focus on a Stanley plate and developed with edinol. The exposure was 1-30 second at f. 15 at 4.30 P.M., in medium light. The print is green carbon from an enlarged negative.

"The Glade" is a very pleasing bit of photography in a woodland interior, in the familiar style known in England as "beech and bracken." Again in this picture we have a very simple composition, which is all the more effective for this reason. It was taken with half of an R. R. lens of 12 inches focus. The stop was 4 (?), and the exposure was made on a dark afternoon. The Kodoid plate was developed with pyro-metol and printed on Royal Bromide.

Mr. Eitel's "Harvest Field" is one of the few successful pictures of this kind which we have seen. The Zeiss lens of 19 inches focus was given 1 second exposure at f. 11 at 3 P.M. The Seed 26x plate was developed with pyro and printed on W. & C. KK Platinum paper.

Mr. Zerbe's "Returning to the Fold" was taken with a Goerz lens of 8 inches focus at f. 16, with 1-25 second exposure in good light at 5 P.M. The Cramer Isochromatic plate was developed with pyro and printed in carbon.



T. EDWARD SCHIEDT
EVENING
FOURTH PRIZE, CLASS B

"Brown October" by Mr. Zerbe was taken with the rear half of a Goerz lens, making the focal length 16 inches. The exposure at f. 16 was 2 seconds in good light at 3 P.M., with a ray screen. The Cramer Isochromatic plate was developed with pyro and printed on brown carbon.

Mr. Schonewolf's marine was taken with an R. R. lens of $8\frac{1}{2}$ inches focus at f. 8 in 1-25 second at 6.45 A.M., on a cloudy day. The backed Cramer Instantaneous Isochromatic plate was developed with ortol and printed on platinum.

Mr. Eitel's "Landscape" was taken with a Zeiss lens of 19 inches focus in 1 second at f. 11 at 4 P.M. The Seed 26x plate was developed with pyro and printed on KK Platinum paper.



F. A. WAUGH

CAMERA AND MICROSCOPE

MICROPHOTOGRAPHY WITHOUT SPECIAL APPARATUS

F. A. WAUGH

Microphotography is usually looked upon as one of the most difficult of all photographic specialties. Commonly the man who expects to try it spends \$300 for special apparatus, then spends a year in learning how to run the machinery, and then goes back to pen-and-ink drawings made through the old camera lucida. Now I don't know how many other men have hit on the same scheme which I have, but as far as I am concerned it is a first-hand discovery. I make my microphotographs with an ordinary camera. Any camera which has a ground glass for focusing will do. I have used the common cycle forms with complete success, though naturally my Graphic Special is more easily manipulated.

The whole undertaking is simple enough. The object is mounted and placed in a compound microscope in the usual way. The microscope tube is then brought down till its axis is horizontal. The substage reflector is placed so as to throw a strong light through the section. The camera is then put in place directly back of the microscope, the camera lens being within half an inch or so of the microscope eyepiece. The axis of the camera lens should coincide as nearly as possible with the axis of the lens system in the microscope. The eyepiece of the microscope and the lens of the camera are not essential. An image can be secured without either one or both of these. Better definition and more satisfactory results are usually secured, however, with both these lenses in place.

The junction of the camera with the microscope should be covered with a black cloth, though this is not absolutely necessary.

Now we are ready to locate and focus the image on the ground glass. To do this, three different matters have to be attended to: (1) The substage reflector must be adjusted until it gives a strong and even illumination all over the field; (2) The microscope must be focused; (3) The camera must be focused. To some extent the last two operations are combined at times, since when the object is approximately in focus it may be brought up sharply by focusing either instrument. When the work is well in hand, this focusing may be done with great exactness. With the lens combinations which I most frequently use, I have found that one can discern with the naked eye on the ground glass a difference in microscope focus of less than one one-thousandth of a millimetre.

As to the subjects which may be photographed in this way, there is nothing to be said, except that anything which can be seen in the microscope can be photographed on the plate, and something more.

F. A. WAUGH
SECTION OF PLUM GRAFT



The quality of the work is just as good as that secured with expensive machinery. In fact, I have made better microphotographs with the outfit described than I have ever seen made with any other apparatus whatever; but that may be, of course, because my observation of other men's microphotography has been limited in range. The accompanying sample is from a rather indifferent section of wood tissue, unstained, and with no special preparation. The magnification shown is about 1000 diameters. It may be noted in the engraving that the pitted cell walls of the ducts are plainly visible, and that is a pretty good test of microscopic work.

THE MAKING OF A SKEPTIC

The photograph can never do full justice to the look
That father's face had on the day he got his picture took.
When father got his picture took he had a winnin' smile,
Jes' like an angel whispered to him every little while;
He wore a stand-up collar and a button-hole bouquet,
An' looked the fam'ly over in a kind an' patient way,
Like nothin' ever riled him. None who saw him would
have said
He'd have the heart to take a strap to me out in the shed.

But when we got back home it wasn't any time at all
Till father smoked his pipe an' left his coat out in the hall,
An' looked as fierce as anything, an' started in to scold
Because the steak was tough an' everything was gettin'
cold.

I tell you it was somethin' most discouragin' an' strange
To see his disposition undergo so great a change.
I wish we could arrange it every day, by hook or crook,
To have him take a trip to town an' get his picture took.

So when I see the portrait of a statesman, lookin' grave,
Or of some military man, a-standin' up so brave,
Or of some actress lady, with a sweet an' tender smile,
Or of some financier, with an expression free from guile,
Or of some scientific man, a-lookin' calmly wise,
Or of a violinist, with his hair down in his eyes,
Or of some literary chap a-bendin' o'er a book,
I think about the day that father got his picture took.

—*Washington Star*.



SIXTH PRIZE
CLASS A

MARY G. HUNTSMAN

BLOSSOMS

EXPOSURE AND LIGHT MEASUREMENT

WILFRED A. FRENCH, A. M.

One of the principal requirements in the practice of photography is the ability to correctly expose the sensitive plate or film. To the experienced professional photographer, whose daily practice enables him to successfully gauge the increasing and decreasing intensity of light as well as its variable character, this feature of the science offers no serious problem. The individual who makes a specialty of portraits understands that the time of day, the quality and strength of light, the complexion of the sitter and color of costume, the speed of his lens, the size of diaphragm and the degree of sensitiveness of his plate must be intelligently considered — separately and collectively — before he determines the length of exposure. This should be done after only a few moments' thought, for to arrive at a conclusion only after a lengthy and strenuous mental process, might endanger the patron's confidence in the artist's ability; besides, much valuable time is wasted. The person who photographs principally interiors will compute the number of minutes necessary to a successful exposure by a process of reasoning similar to that of the portrait photographer. So do all those who make a specialty of any branch or branches of photography.

If, however, a photographer makes essays in a sphere of his profession where he lacks the necessary experience, he will find himself in a dilemma, unless aided by a reliable guide, be it in the form of a brother-photographer, printed suggestions, or an exposure-meter. If left entirely to his own resources, he will venture several plates of the same subject, varying the length of exposure, with a possible change in the size of diaphragm, according to the conditions confronting him. Such a proceeding is manifestly attended by waste of time and materials, regardless of the threatened loss of favorable opportunity. Let our readers imagine the case of photographing a series of interiors, requiring an average exposure of sixty minutes,

ALBERT H. NOBERG
WHAT WILL MAMMA SAY?
SEVENTH PRIZE, CLASS A



and the time allotted to the entire work only a few hours. Or let the subject be a number of oil-paintings in a feebly-lighted apartment, and the operator not familiar with this class of work. In either case the efforts are largely experimental, and success problematical. Then please imagine the result with an efficient and well-equipped photographer facing the situation. He will gaze about him a few moments, appreciate the existing conditions, and what he has to work with, then proceed with the task in hand, calmly, intelligently and prudently. To him success, barring accidents, is always in sight. An intelligent professional, undertaking such a task for the first time, can exercise better judgment than the novice, who is likely to be utterly helpless facing an unfamiliar phase of photography. In the case of a dark interior, the professional will calculate the length of exposure on the basis of minutes; the amateur in seconds. The difference in the results of the two laborers in a new field is obvious. This is not intended as a reflection on the intelligence of the amateur. Far from it. The illustration is designed merely to demonstrate that the professional of even average ability, by reason of his practical knowledge of light, of its actinic power, fickleness, and possibilities, is, in one respect, better equipped than the amateur. We except, as a matter of course, the numerous gifted amateurs — those of acknowledged technical mastery. Much might be said about the loss of time and materials, with reference to the photographer who never emerges from the experimental stage; who, instead of proceeding in an intelligent, rational manner, works blindly, as it were, by exposing a number of plates in the fond hope of saving at least one. Such a man does not progress and cannot be considered a reliable workman, even if he produces occasionally an excellent, well-timed negative. A first-rate negative should be the rule and not the exception. To materially assist in determining the correct length of exposure, the exposure-meter — known also as actinometer,



LAWRENCE MACOMBER
THE GLADE
FIFTH PRIZE, CLASS B

photometer or actinograph — was placed on the market, and no one can deny that it has performed its mission well. Although a really indispensable device, the exposure-meter has numerous shortcomings. One is that each pattern differs from the other in method of application; there is no universal standard. Another serious objection is the amount of time required to ascertain the necessary duration of exposure. There is also the well-known difficulty in procuring the special tinting-paper called for by each different exposure-meter. We find no uniform standard of tint or sensitiveness, and it is not always easy to obtain it in perfect condition. Professionals do not resort to the use of the actinometer except in the bichromate printing processes, where it is deemed a necessity. In the absence of an exposure-meter many workers, of limited experience in timing plates, have recourse to note-books recording practical details of plates previously exposed. But all these efforts and devices to ascertain one little item of information, viz., how long to expose a plate, appear inadequate and seem out of harmony with this age of invention and scientific research. There is room for a simple, accurate and uniform system of measuring the intensity of light-values, by which almost any one can quickly and easily determine the correct length of exposure.



W. H. ZERBE, JR.

TILLERS OF THE SOIL

This brings up the subject of a method of measuring the intensity of light by F. M. Steadman, upon which topic that gentleman discoursed so interestingly at the National Photographers' Association at St. Louis last October. His desire is to establish a simple means of measuring the strength of light, or rather, we should say, the light reflected by the sitter or any object to be photographed. He states, that while there are standard scales for measuring dimensions, weight, volume, degrees of temperature, humidity, etc., there is none for measuring light. As he expresses it, "We want to make a scale by which we can measure the intensity of light and express it in actual time — in simple units. Then we can study and practice photography successfully." By taking one second as a definite unit, he suggests the following scale, — $\frac{1}{2}$, 1, 2, 4, 8, 16, 32, considering it a very true scale for light-intensities, and with it one can determine exactly the intensity of light.

There are several points of weakness in the plan proposed by Mr. Steadman which were mentioned editorially in the December issue of the PHOTO ERA; but it is worthy of note that, agreeably to the wish of that gentleman, President Reeves appointed a committee, of which Mr. S. L. Stein was a member, to investigate the merits of Mr. Steadman's method and make a report. The committee reported favorably, acknowledging the value to the practice of photography of the method as expounded by Mr. Steadman before the convention, and recommended its adoption, together with suggestions as to the selection of standard papers, for the measurement of light-intensity, and scale of values, — $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4, 8, 16, 32 seconds or minutes. As to the application of the Steadman method to dry-plates, the committee recommended that the National Photographers' Association request each and all of the plate and film manufacturers of the United States to investigate the method, with a view toward establishing a uniform system, should the method be found satisfactory. This report was accepted by a unanimous vote of the convention.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

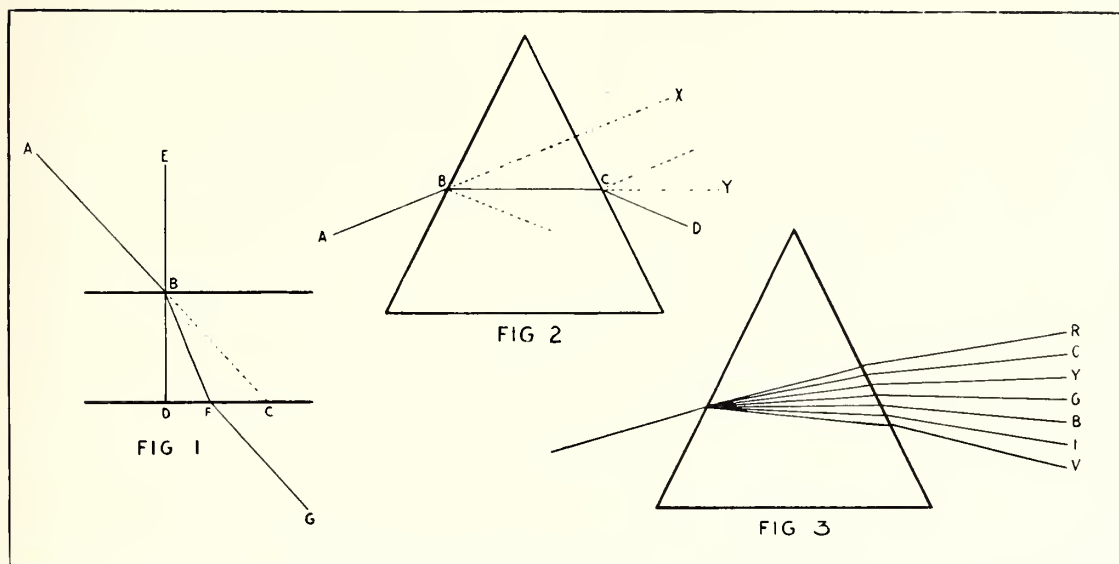
FIRST PAPER — LIGHT

1. *Theory of Light.*—There is supposed to be an elastic medium, termed “ether,” constituting a kind of universal atmosphere, diffused through and pervading all space. It is so subtle that it glides among the molecules of bodies as the air does among the branches of the trees; it fills the pores of all substances, penetrates all transparent or translucent matter, and eludes all chemical tests. Sources of light, such as the sun, set this ether in motion, sending off waves or vibrations in every direction. The surrounding ether catches up these vibrations and carries them along like waves in water until they reach the eye of the observer, and the sensation produced is light. Light has several properties peculiar to itself, four of which are of especial interest in this lesson, as the possibility of photography is dependent upon them; they are refraction, dispersion, reflection, and actinism.

2. *Refraction.*—Light travels in straight lines as long as it continues to travel in a medium of uniform density. When light passes from one medium into another of different density, as from air into glass or from glass into air, the rays are bent or refracted from their original direction unless they fall at right angles to the surface, when they proceed straight on. If light passes from a lighter to a denser medium, it is bent toward a line perpendicular to the dividing surface; if it passes from a denser to a lighter medium, it is bent away from the perpendicular. The amount of the bending or refraction depends upon the density of the medium; it is more with water than with air, more with glass than with water, and more with some kinds of glass than with others. Figure 1 shows the ray of light, AB, falling obliquely on the surface of a thick glass at B; the ray is bent toward the perpendicular, emerging at F, where it is bent again on coming into the air, this time away from the perpendicular, and travels in a line parallel to that of its entering the glass. The ray of light, EBD, passing through the air at right angles to the surface of the glass at B, proceeds straight through it to D and onward, as before indicated. If a ray of light is refracted through a glass prism, the inclination of the sides causes the ray to be bent twice in the same direction. In Figure 2 the ray AB enters a prism at B; the ray is bent toward a perpendicular to that side of the prism, shown by the short dotted line, and instead of proceeding straight to X, passes to C. At this point it emerges into the air and is again bent, this time away from a perpendicular to this second side, shown by the short dotted line, and instead of proceeding straight to Y, passes to D. Notice that the ray is bent toward the base of the prism; you will see later that this is an important feature in the construction of a lens.

3. *Dispersion.*—Refraction does more than the mere bending of the ray out of its straight course. It also disperses or decomposes it into seven colors called the “solar spectrum.” By the use of a second similar prism these colors may be recomposed to produce white light. This proves that what we regard as white light is a combination of these seven colors which produce the sensation of white light by their simultaneous effect upon the eye. These colors, produced by refraction of light through a prism, always occur in the same order,—viz., red, orange, yellow, green, blue, indigo, and violet. Notice in Figure 3 that each color is refracted at a different angle, the violet ray is bent the most and the red ray the least. This is the result of the difference in the vibrations producing different colors. Color is analogous to pitch, violet corresponding to the high and red to the low sounds in music. Intensity of color, as of sound, depends on the amplitude of the vibrations. Light has already been spoken of as the result of vibratory action on the eye, and this statement can be expanded still further. White light is a combination of different wave lengths or rates of vibration. If the whole combination reaches the eye, the sensation is that of white light, but if rays of only one or two wave lengths reach it, the sensation is that of color.

4. *Reflection.*—No object has color of itself. Color is the result of the action an object

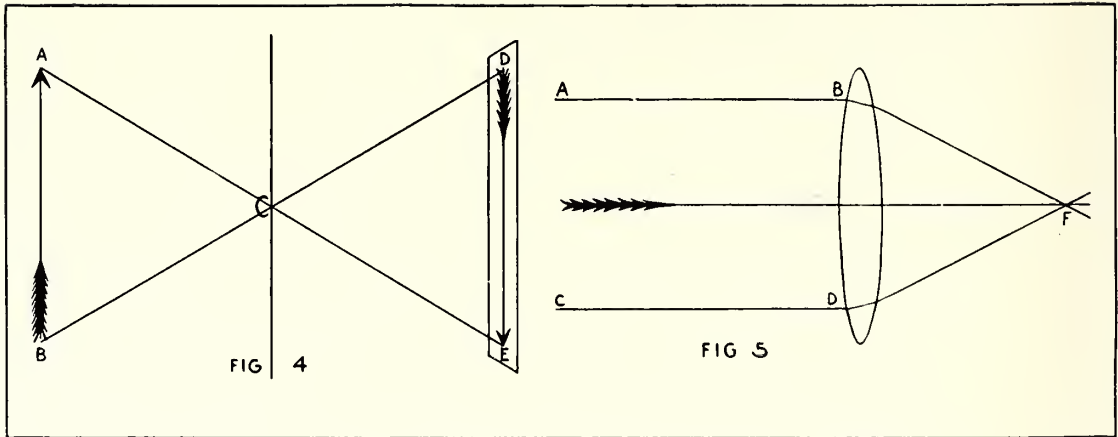


has upon the light falling on it. All objects have the power of absorbing certain light rays or wave lengths and reflecting others, and the effect of these reflected rays upon the eye produces the sensation of color. When an object absorbs the wave lengths producing all the colors except blue, but reflects those to the eye, it is called a blue object; when it absorbs all but green, it is called a green object. If it absorbs all the colors, it is black; if it reflects all the colors, it is white. The waves of light which come in contact with an object are broken up by the rough particles of its surface, and each particle reflects rays in all directions. The eye, receiving them from every point of an object, condenses them to corresponding points and rearranges them on the retina in the form of the object from which they were reflected, and we say we see the object. It is reflection which makes it possible for us to see. As is explained later, the lens acts on the same principle as the eye.

5. *Actinism.*—Light has the power of causing chemical action on certain substances, and this property is called “actinism.” It is very well shown by the action of light on the compounds of silver, especially silver chloride and bromide. White silver bromide when exposed to light gradually darkens, losing part of its bromine and becoming partly changed to a less stable compound or to metallic silver. Upon this action depends the formation of the image on a plate or film. Silver bromide is not equally sensitive to all colors of the spectrum. Violet has a marked effect, while red has almost no effect whatever, and the other colors range between. This is the reason for using a red light in the dark room.

THE LENS

6. *Needle-hole Images.*—Many years ago somebody discovered that when light was admitted to a darkened room through a small opening about the size of a needle hole, an inverted image in natural colors of the objects outside would be formed on a white card placed opposite the opening. Figure 4 shows clearly why the image is inverted. Light travels in straight lines as long as it continues to travel in a medium of uniform density. The arrow AB represents an object outside, such as a tree. By reflection rays of light are sent off in every direction in straight lines from A; a few of them pass through the needle hole at C and proceed in straight lines until they come in contact with the white card, and there form an inverted image at E. In the same manner rays from B travel to D, and likewise from every point between A and B, forming a complete inverted image, as shown by the inverted arrow DE. A needle-hole image is not very bright and sharply defined, nor can it be made so. If the needle hole is made larger, the image



becomes brighter, but its sharpness or clearness is greatly decreased. A group of needle holes will give more light, but a separate image is formed by the rays of light passing through each opening, and the result is a number of blurred images overlapping each other on the white card.

7. *Use of Refraction in the Lens.* — It is obvious that in order to make use of this principle, a large opening is needed, together with some means of bending all the rays of light passing through it to one focus, so that instead of forming several overlapping images, they would all be combined into one. It has been found that by making a piece of glass of a particular shape one could make the refracted rays of light pass through it in the desired way and accomplish this result. If this piece of glass is used instead of the needle hole in a darkened room, the resulting image formed is much sharper and brighter. This piece of glass is called a “lens.”

8. *The Lens.* — A lens may be considered as a pair of prisms placed base to base, of one piece of glass, and with curved instead of flat surfaces. Rays of light striking perpendicularly in the center of the lens will pass straight through it, as shown by the arrow in Figure 5. These are called “axial rays.” All other rays, such as AB and CD, are refracted on entering and leaving the lens; they are bent toward the thick part of the lens and cross the axial rays at F, the focus of the lens, — the point where an image of the object from which the rays were reflected is formed. The distance from the center of the lens to the point of focus is called the “focal length.” It will be seen, therefore, that the mission of the lens, like that of the eye, is to receive the waves of light from every point of the object, and to bring them to a point where a distinct image of the object from which they were reflected will be formed.

THE CAMERA

9. *The Camera Obscura.* — In order to make use of the lens and the darkened room as a means of portraying the scenes of nature, the camera obscura, or sketching camera, was invented. This was simply a portable, darkened room, often a tent of black cloth, within which was a small table having a lens inserted in one side opposite a small opening in the room, and a mirror placed under the center of it at such an angle as to reflect the image upward. Set into the top of the table was a piece of ground glass to receive the image, which was copied with a pencil as it appeared through a thin sheet of white paper laid on the ground glass.

10. *The Modern Camera.* — From this first invention has gradually been developed that complicated thing of lens, wood, leather, brass, lacquer, and varnish, which the beginner calls a “camera.” Manufacturers have vied with each other and added improvement after improvement to their cameras, until now many of them have been brought to a degree of perfection which it seems almost impossible to excel. The various fittings and appliances have been added simply to increase the beauty and compactness of the camera, and to make it more readily adaptable to the varying conditions under which it may be used, and the many different classes

of work which the photographer may wish to attempt. The beginner should not regard his camera as anything complicated, for, with all its fittings, it is simply a light-tight box with a lens fitted into a small opening at one end and an arrangement at the other by which the sensitive plate or film may be held at the desired distance from the lens. Pictures of simple, ordinary scenes, just as good as can be made with the most complicated and ornamental of cameras, have been produced with a rough packing box, made light-tight, and provided with a lens at one end and some means of holding the sensitive plate in position at the other. This fact is mentioned merely to show that the essential requirements are very few, while the helps, comforts, and conveniences which camera makers have devised are many.

THE SENSITIVE SURFACE

11. *Action of Light on Silver Bromide.*—After the camera obscura had been in use many years, there was a very natural desire to discover some means by which the unsatisfactory and laborious method of tracing out the image with a pencil could be bettered. Scientists began to study the action of light on different substances, and the final result was the discovery of a light-sensitive surface from which have been evolved, by successive improvements, the dry plates and films which are in general use at the present time. On this sensitive surface the image projected by the lens is received, and after the light has done its work, the image is made visible by chemical means. Scientists found in their experiments that the action of light was quite different on different substances. With one it had a tendency to bleach, while with another it darkened or discolored the substance. The whole principle of photography is dependent upon the action of light on certain salts, the most sensitive of which is silver bromide. Bromine is a gas which has a great affinity for some other substances, and therefore a tendency to combine or react with them or their compounds. When it combines with silver, silver bromide is formed. These elements, which are themselves insensitive to light, form a compound which is very sensitive to it. Silver bromide absorbs moisture from the air, and if it is exposed to light, part of its bromine reacts with the water thus absorbed, and the salt gradually darkens, becoming partly reduced to metallic silver. Darkening will take place more rapidly if there is a substance present with the silver bromide which combines or reacts with the bromine more readily than water, thus reducing the salt to metallic silver faster. These substances are called sensitizers. There are several of them, some acting to a greater extent than others, so that it is possible by varying the nature and quantity of the substance to regulate the rapidity and extent of the darkening.

[The author here states as a fact what can only be regarded as a disputed theory, but this is perhaps the simplest way of explaining the observed facts, and is a good working theory.—ED.]

12. *Plates and Films.*—Since silver bromide can be made so extremely sensitive to light by the use of substances known as sensitizers, it has come to be considered the best medium for making plates and films. For this purpose it is combined with gelatine and a thin coating is spread on a sheet of glass or celluloid for support. Where celluloid or some other flexible material is used to support the emulsion, it is called a “film,” because of its extreme thinness; if glass is used, it is called a “plate.” Other chemicals are used in making a sensitive emulsion, but they do not play important parts, and need not be considered here. The gelatine is used to hold in suspension the finely divided atoms of silver bromide in an evenly distributed state, and it is also the chief sensitizer in ordinary plates and films. Many sensitizers are more powerful than gelatine, but they cannot be used in plate and film emulsions, because they would reduce and blacken the silver bromide long before the exposure was made. It can be readily seen that such plates and films could not be kept any length of time before use.

13. *The Action of Light during Exposure.*—It should now be perfectly clear that a plate is covered with a thin emulsion of gelatine carrying in it silver bromide, and when an exposure is made by opening the shutter of the camera for even the fraction of a second, it is sufficient to produce an effect upon the sensitive surface and form an image. Every part of the picture



W. H. ZERBE, JR.

RETURNING TO THE FOLD

before the camera reflects light, bright objects more and dark objects less; this light passes through the lens and forms an image on the plate, reproducing all the varying intensities of light and shade seen in the picture itself. These different intensities of light instantly begin to work a change in the composition of the silver bromide in proportion to the brightness of the light on this or that part of the image, and the length of the exposure. This change is caused entirely by light action; for, as a result of exposure, the silver bromide is subjected to the action of a weak sensitizer (gelatine), and the decomposition or reduction to metallic silver is very slightly commenced. The partial reduction to metallic silver, which the action of the light just barely starts, is not uniform on all portions of the plate, but is in proportion to the brightness of the light reflected through the lens by the different parts of the picture photographed. Parts that are in deep shadow reflect very little light, and, as a result, the portions of the plate corresponding to these parts of the view are affected very little, if at all, and remain unaltered silver bromide. Parts of the view which reflect bright light cause a slight reduction of the silver bromide on corresponding portions of the plate. It has already been stated in this lesson that silver bromide is more sensitive to some colors than to others, regardless of their brightness, and this fact renders the light action of a few colors slightly out of exact proportion to their intensity. This, however, need not concern the worker, unless he wishes at some later time to learn something of orthochromatic photography.

DEVELOPMENT

14. *The Nature and Action of a Developer.* — If a plate is examined after exposure, no change will be seen in it, but the application of certain chemicals will bring out an image of the view photographed. This proves that a change caused by light action has taken place,

TENTH PRIZE
CLASS B



THEODORE EITEL

LANDSCAPE

since an unexposed plate will not produce such an image. It will thus be seen that an exposed plate needs to be further sensitized or developed to make the latent image visible. A developer is simply a sensitizer which acts after exposure, but cannot be compounded in the plate emulsion because it is so powerful. This sensitizer continues the reduction of the silver bromide to metallic silver, which was started by the weak sensitizer (gelatine), in proportion to the amount of the light action. Every day one sees actions which have a tendency to continue when once started. For instance, iron is caused to rust by the action of the moisture in the air, but if a quantity of water is placed on it, the rusting proceeds much more rapidly. Now the acceleration of the change in silver bromide (resulting from exposure to light in the presence of a weak sensitizer and development by the action of a powerful sensitizer) is very similar to that in the rusting of iron. The chemical action produced by development is the same as that produced by exposure, only it proceeds much more rapidly and to an extent so much greater that it is visible to the eye. It is evident that exposure has affected those parts of the plate subjected to the action of bright light, while the parts which received no bright light remain unchanged. The silver bromide that has not been affected by light is sufficiently stable to resist the reducing action of the developer when it is applied, while that which has been so affected, and consequently lost part of its bromine, readily gives up the rest and becomes reduced to opaque metallic silver, forming the negative image. As the image gradually appears on the exposed plate, after the developer has been applied, it seems to be composed of a substance with varying degrees of blackness, according to the varying intensities of light at different portions of the view photographed. The quantity of reduced silver on the various parts of the developed plate is in exact proportion to the intensity and activity of the light that reached them. Where the view showed strong light, the plate is covered with a black deposit; medium light is shown by a gray deposit, while deep shadows are represented by almost unchanged film. It will be noticed that the colors are reversed. The whites in nature are black on the plate and the blacks are white. This is the reason for calling the developed plate a negative.

15. *Fixation.* — When the development of an exposed plate is completed, the film consists partly of metallic silver and partly of unreduced silver bromide which is almost as sensitive to white light as it was before the developer was applied. Moreover, the film is opaque, so that it would be difficult to print from it even if it were safe to expose it to white light long enough to do so. Thus it is obvious that, in order to render the plate permanent, so that it may be exposed to white light, and to make it more nearly transparent, so that it may be used for printing, the unchanged silver bromide must be dissolved and removed from the film. Silver bromide is insoluble in water, and so this is accomplished by placing the plate in a chemical solution called a “fixing bath,” which “clears” or “fixes” the image. The fixing bath reacts with the silver bromide and forms a transparent double salt which is soluble in water and can be readily washed out of the film. This leaves a reversed image or negative of black metallic silver imbedded in gelatine, representing by proportionate degrees of “density” or opacity the different intensities of light and shade in the view photographed.

PRINTING

16. *What is Printing?* — The negative is but the means to an end, as it is in every way the opposite of the view itself. Its name comes from the fact that it is reversed, not merely as regards light and shade, but from left to right and from top to bottom. Printing is reversing a negative, that is, making a positive from a negative. A positive represents in monochrome the objects as we see them, both as regards light and shade and position. Printing from a negative consists simply in placing behind it a sheet of paper coated with a light-sensitive emulsion, similar to that used on plates and films, which will darken on exposure to white light. It will be remembered that the high lights or lightest parts of the view as it appeared, are blackest on the negative; the shadows and darkest parts are almost clear glass, and the half-tones or medium lights are gray-black. In printing, the dense, black portions of the negative will allow but little light to pass through and affect the paper beneath them, and so these protected portions of the paper will remain white, or nearly so, producing the high lights of the print corresponding to those in the view itself. Portions of the view which are nearly transparent allow the light to pass through with almost full intensity and darken the paper beneath, producing the shadows of the picture. The amount of darkening is in proportion to the degrees of transparency of the negative, which were caused by the different intensities of light in the view itself. All intermediate shades, rendering the half-tones of the print, are reproduced in the same way and at the same time.

17. *Printing Processes.* — Printing papers may be divided into two separate and distinct classes, known as “printing-out” and “development” papers. The image becomes visible on printing-out papers very soon after exposure to the light, and is printed until it becomes as strong as or stronger than is desired in the finished print. After toning, fixing, and washing, such a print is permanent and ready to mount. Blue-print paper, plain silver, albumen, gelatine, and collodion papers belong to this first type. Silver chloride is the sensitive salt used in the emulsion of most of these papers, as it darkens more rapidly than silver bromide. The names gelatino-chloride and collodio-chloride are given, according as the silver salt is carried in gelatine or collodion. On development papers the image after exposure is very faint or not visible at all until after it has been treated with a developer. Bromide papers are coated with a gelatine emulsion of silver bromide very similar to that used on plates and films, except it is not so highly sensitive. Such papers require the development and fixation of an invisible image the same as a plate. The so-called “gaslight” papers are slow bromide papers, and are treated in the same way. Platinum is another development paper, but differs from bromide in that the image is slightly visible after printing, the shadows appearing a brownish orange tint. Development brings out the full image and changes the colors to blacks and grays, after which the print is fixed for permanence. Carbon printing is also a rather complex development process, and there are many others which need not be mentioned here.

Editorial Department

THE PROGRESS OF THE PAST YEAR

In accordance with our usual custom, we shall again devote a few lines to the advances of the year in the photographic field. In processes there is little to record. Color photography has made steady progress in the hands of several experimenters, but no new discoveries have been made, and a cheap, simple, and practical process is no nearer than a year ago. The usual number of new lenses and other pieces of apparatus have been placed upon the market, but nothing is startlingly original. Catatypy is still in the hands of the inventors, Drs. Ostwald and Gros, who are steadily improving it, and expect that within a short time it will displace all other forms of pictorial reproduction for commercial uses. In England, during the closing months of the year, there has been a popular furore over oil-printing, a new modification of the bichromate processes, claimed to produce prints more easily susceptible of control and modification than those of any process yet known.

In photographic politics far-reaching events have occurred. An international organization has been organized to include the best pictorialists of the whole world. This society will hold annual shows in various capitals, and New York will have the first of these next winter. In America the First American Salon has become an accomplished fact, and seems assured of continuance. The rules adopted seem to have won the confidence of American exhibitors, as is proved by the enormous number of entries. The PHOTO ERA has in times past objected to the methods and standards of the Photo Secession, because it believed that they were not sufficiently conducive to the advance of American pictorial photography. Now that a new organization has appeared with more democratic ideals and rules, the purpose of the PHOTO ERA is accomplished, and we shall henceforth endeavor to support whatever we find good in American photography, regardless of society affiliations. In England the separation of the Linked Ring from the R. P. S. engendered bitter feelings, but the result has proved highly beneficial to both sides by the stimulation of healthy competition, and the bitterness has long since disappeared. We trust that in America also, the forming of sides will induce each to do its best, and to learn to appreciate and understand the efforts of the other.

THE PHOTO ERA TOURS OF EUROPE

The sets of pictures submitted by the participants in the PHOTO ERA Trip Abroad in 1904 were judged on December 14 by a jury composed of Wilfred A. French, Rossiter Howard, and M. O. Sampson. These judges unanimously awarded the prize to Mr. F. H. McClure of Portland, Oregon, and a check was mailed him the same day. The jury agreed without division that Mr. McClure's pictures were the best submitted in all of the following respects: Choice of subjects, artistic treatment, composition, lighting, exposure and development, printing and mounting. A selection of pictures from the prize collection, which numbered 99 prints, will be published in the February PHOTO ERA.

The 1904 tour has now become a matter of history, and the PHOTO ERA is so impressed with the value of the European trip as an educational influence in photography, that we have decided to repeat what can no longer be regarded as an experiment. We shall offer not one trip, but a series of tours, giving the possibility of selecting a route which will appeal to almost any taste or financial limitation. The principal tour will follow nearly the same lines as that of last year, approved by long experience as one of the most popular travel routes. Landing at Antwerp, we shall see a little of Flanders, spend a week in Germany, make a tour of Switzerland, and traverse the Italian peninsula from Venice to Naples. This route will give us the oppor-

NINTH PRIZE
CLASS A



MORRIS WASSERMAN

PRESERVES

tunity to study the best art and find the most picturesque and photographic scenery, people, and architecture of Europe. We shall visit the Italian Lakes, Venice, Torcello, Chioggia, Ravenna, Bologna, Florence, Fiesole, Pisa, Assisi, Perugia, Orvieto, Cortona, Rome, Tivoli, Monte Cavo, Naples, Capri, Pompeii, Sorrento, and Amalfi, sailing from Naples for Gibraltar, the Azores, and New York on the return trip.

Those desiring to extend the trip will be advised to go on to Sicily and Greece in our special steamer. This trip will be much more interesting than last year, and will include almost every point of historical and archeological interest in Magna Graecia, from Sicily to Constantinople. Another option for extending the trip will be a return through Eastern and Southern Germany to Holland and London.

London may also be visited at the beginning of the trip, if desired, by sailing one week earlier, and various other changes may be made in the early portion of the trip. A detailed itinerary of the various routes offered will be published next month.

What do we offer in these trips, and to whom should they appeal? In the first place we are offering photographers the chance to take pictures in most picturesque localities, under the guidance of leaders who are both expert photographers and skilled critics of art. We also offer them the priceless opportunity of seeing a great part of the art treasures of the world under the guidance of men who have devoted their lives to art interpretation. These tours should also appeal to every man or woman who wishes to visit Europe either alone or with friends. We offer expert guidance to everything of legitimate human interest on our whole route. We take every care and expense of travel from your shoulders from the time you step upon the steamer until your return to America. No one could do more, and no other conductors do nearly as much. We invite communication from every reader who has any thought of visiting Europe this summer.

A WORD OF PROTEST

The New York Salon has closed its doors, and its promoters are basking in the sunlight of success, and intoxicating themselves with the sweet nectar of victory. While the Salon was undoubtedly successful, and the best exhibition of pure photography which has ever been formed in this or any other country, the PHOTO ERA wishes to place itself upon record as opposed in

W. H. ZERBE, JR.
BROWN OCTOBER
EIGHTH PRIZE, CLASS B



principle to the selection of a jury of painters alone to judge artistic photographs. The PHOTO ERA believes that the camera is a means of artistic expression through a plastic medium, and that only by holding to the utmost possibilities of this medium can photography reach her full stature as a handmaiden of the arts. Therefore the painters' limitation of accepted photographs practically to those showing no handwork is a limitation in principle which we cannot accept. The negative or the gum-bichromate film is a plastic medium partially prepared, and the photographer with the artistic ability has the right to express his artistic emotions as well as in him lies, through any alteration of the facts of nature thereon imprinted which seems to him advisable. Naturally, in doing this, he must be judged by his ability and the artistic truth of his results, but the right must not be denied to him who has the genius to accomplish.

A PLEA FOR FAIR PLAY

Judging from the violent opposition of some of our foreign exchanges to the system of measuring light-intensities, which Mr. Steadman is soon to give to the public, it is a misdemeanor for an American to introduce anything new in the practice of photography. The chief objectors seem to be manufacturers of exposure-meters, who imagine that, because their product has been the source of practical value to a large class of photographic workers, there is no room left for improvement in that direction. Can it be—perish the thought!—that our European friends dread the success of the Steadman system, lest it might endanger or even disturb a flourishing British industry? It would be ungenerous for us to suppose that there is a country desirous to arrogate to itself all the inventions and improvements yet to be made in the interests of photography. But harboring such a wish and accomplishing it are two decidedly different things. We imagine that there would be no objection on the part of numerous photographic writers if Mr. Steadman were to migrate to England and there develop

his idea advantageous to photography, in which case he would receive all possible encouragement from a delighted photographic fraternity. Perhaps he might then also become the recipient of a certain medal, so frequently bestowed by a (in England) well-known society.

Handel, Herschel, Kneller, Alma-Tadema, Herkomer — all continental celebrities — settled in fair Albion and, later on, thanks to their genius, were claimed as Englishmen. It has always seemed to us that it is the duty of every journal published in the interests of photography to further and encourage each honest effort, in any part of the world, to improve our existing forms of apparatus, accessories and working-methods, instead of strangling such an endeavor in its birth. Jealousy, spite, prejudice or trickery should be foreign to the nature of every broad-gauged, fair-minded journal devoted solely to the interests of its supporters.

IMPRESSIONS OF THE NEW YORK SALON

WILFRED A. FRENCH, A.M.

Many years have passed since we have had occasion to be really enthusiastic about matters photographic; but our admiration and exultation reached high-water mark, when we were privileged to inspect the First American Photographic Salon, which was held in the Clausen Art Galleries, New York City, December 5 to 17. It was a source of sincere gratification to realize that the vast undertaking, which had called for the combined activity of numerous American photographic societies and eminent workers on both sides of the Atlantic, and in the face of a long and persistent opposition, had culminated in an event of unusual importance in the photographic world. Our satisfaction at the success which has attended the tireless efforts of the organizers of the First American Photographic Salon, notably Mr. Curtis Bell of New York, is such that we can afford to ignore the various attempts of certain persons to render this enterprise impossible. The quarters selected for the exhibition were spacious, well-lighted and easily accessible. The dominant feature of the Salon, however, was the exhibits, selected by the jury for being primarily artistic and straight photography. Prints other than in black or warm brown tones were barred, as were also those that had been worked up or smacked in the least of clap-trap. It was the heyday of straight photography, a return to the primitive principles of the art. Pictures which had received the aid of the brush, however skilfully executed, were turned down by the jury, which, as is well known, comprised the leaders of American art. This must come as a severe shock to those pictorial workers, who have drifted away from the canons of photographic simplicity in the hope of developing a style of art that would eventually compete with painting. On the other hand, practitioners along original photographic lines, who have vainly knocked for admission at the door of previous exhibitions, have seen their efforts hung at the First American Photographic Salon. It was a surprise all around. The rejection by the jury of prints in strong monochrome, red and blue, for example, should be approved by all; for if a photograph cannot stand in a black or brown tone, with suitable gradations, it cannot gain legitimately by being transposed into color. No person in his right mind would hope to appreciate a beautiful landscape by viewing it through a piece of colored glass. In surveying this interesting exhibition we were impressed also by the highly artistic atmosphere, as well as by the vigorous, healthy tone, that prevailed. While there was evident much originality in *motifs*, there was a noticeable absence of those mawkish, aberrant, morbid impressions, reminiscent of the late, unlamented Mr. Beardsley. For this alone we owe much thanks. It is to be regretted, however, that portraiture was not more strongly represented, but, better the few masterly portraits of Allen Drew Cook than a liberal sprinkling of efforts less excellent. The foreign contributions are of an unusually high order of merit, notably the marines, while those of native workers, represented principally by genre and landscape studies, are, with few exceptions, an honor to American photographic art.

The Round Robin Guild

*Conducted by Elizabeth Flint Wade. Specially designed for the Amateur Photographer and the Beginner.
Membership may be obtained by sending name and address to the PHOTO ERA.*

"If I could find the Little Year,
The Happy Year, the Glad New Year,
If I could find him setting forth
To seek the ancient track,
I'd bring him here, the Little Year,
Like a peddler with his pack.

"And all of golden brightness,
And nothing dull or black,
And all that heart could fancy,
And all that life could lack,
Should be your share of the Peddler's ware,
When he undid his pack."

This is what I would do for the members of the Round Robin Guild were it not for the "If!" which makes so many of our desires impossible. But it does not prevent me wishing each and every one a Happy New Year, and wishing also that it may be a happier Year than all that have gone before.

No one is better authority on Yule-tide joys and New Year's pleasures than Dickens, and Dickens says that "New Year's Day is the best and happiest in the whole year, and one that is almost sure to bring good fortune with it."

"Here's hoping" that it brings good fortune to us all, and we bid the New Year welcome, thrice welcome, — for does not its advent create anew in us, —

"The hope of seeing what we have not seen,
The hope of winning what we have not won,
The hope of being what we have not been,
The hope of doing what we have not done" ?

LANTERN SLIDES BY REDUCTION

THE amateur who has an interesting collection of lantern slides and a small magic lantern has material for many a pleasant evening. If in addition to showing the slides, and simply mentioning the titles of the pictures, he arranges a short talk interspersed with anecdotes connected either with the making the picture or the picture itself, he can furnish a unique evening entertainment.

Lantern slides are easily and quickly made by contact printing, and directions for making them were given in the December number of the PHOTO ERA. While in many respects contact printing is the most satisfactory way of making slides, yet when one has a large negative from which a slide is desired, he must resort to the process of reduction. This process is more work, still it is not so much of a task as one imagines, or as one would believe from reading some of the directions for making slides with the camera.

In the Round Robin Guild Department for April, 1904, will be found a description of a special camera for making lantern slides by reduction. The lens is a fixed focus, and the negative is inserted in one end of the camera, the slide at the other, and the exposure made. This camera is listed at \$5.00, and while it is one of the most convenient of instruments, in that it simplifies the work to such a degree that it is almost as easy to make a slide by reduction as by contact, still one need not have this special camera in order to make good slides. One can make his own "dark box," which is simply a wooden box a foot and one half in length, and 8 x 10 in size, and open at both ends. In one of the ends a frame is fitted into which may be slipped kits for the different-sized negatives, which make it possible to place the negative in the frame exactly in the center of the opening.

This box is attached to one end of a board three or four feet in length, the camera is set on the other end of the board so that the lens comes within the open end of the box. If the size of the negative or the angle of the lens make it necessary for the lens to be set outside the box, then a rubber focusing cloth is thrown over the whole, so that no light enters the lens save through the negative.

In order to get a clear, sharp slide, the light entering the negative must be unobstructed, so an upper room is chosen for the work, a table placed near a window, and the board holding camera and box tilted at such an angle as will bring the sky for a background. To hold the camera in place when focused, a pair of wooden thumb-screws are used, either screwed on the board directly back of the camera or they may clamp the frame of the camera to the board.

As a guide to centering the slide, a lantern-slide mat is pasted on the ground glass so that the center of the opening comes in the center of the ground glass. The lens should be so arranged that it points directly to the center of the negative. A small piece of board may be placed under the camera to bring the lens to the proper position, in case it does not coincide with the center of the negative.

Focus sharply with a large diaphragm, then put in a small diaphragm for the exposure. Close the shutter, put in the lantern plate, open the shutter, and make the exposure, which varies from ten to thirty seconds according to the density of the negative.



Mary H. Mullen

Child Study, Second Prize

Of course a fine negative makes a fine lantern slide, but sometimes a thin negative makes an excellent slide.

In placing the negative in the frame for making the slide, if it is put in upside down, the image will be upright when viewed in the camera, and this assists materially in securing a good focus. The film side of the negative is placed toward the lens, and the glass side should be cleaned and polished to insure a clear image.

In beginning the making of slides by reduction use only such negatives as will give a fine image. When one has become somewhat expert, then one may experiment with negatives of inferior quality; but if the first trials are made on poor negatives, the amateur is quite apt to be discouraged,—if not disgusted,—with the making of slides by reduction, and abandon the work altogether.

A developer which gives admirable result, but which requires full exposure and rather slow development, is one in which hydroquinone alone is used for the developing agent.

Mix in the order given the following chemicals:—

Water, 20 oz.; hydroquinone, $\frac{1}{4}$ oz.; sulphite of soda, $\frac{1}{2}$ oz.; bromide of potassium, 20 grains; citric acid, 10 grains.

In mixing solutions for lantern slides the water used should be filtered through two thicknesses of filtering paper. It is also a wise precaution to filter the developer after it is mixed to avoid pinholes in the slide by bits of dust or specks settling in the film. After the negative is developed and fixed, if it does not appear clear and sharp, lay it for a moment or two in a weak solution of ferricyanide of potassium, rinse it, and return it to the hypo bath for the purpose of removing any trace of the ferricyanide, then wash and dry.

SILHOUETTES

SILHOUETTES are always interesting, and may be used in many ways for decorative work. It requires no special apparatus for the making, and the arrangement for the sitting requires only a few minutes' work. The room should be on the second or third floor, so as to command a clear view of the sky. All but one of the win-

dows in the room are darkened, and over this window must be stretched a piece of very thin muslin. The camera is placed exactly opposite the center. A sort of tunnel must be constructed, leading from the camera to the window, and this is easily done by running two stout cords from the top of the window to the opposite side of the room, and hanging over these cords blankets or shawls to exclude the light. The sitter takes his position in a chair placed sideways to the window, and turns the head so that an exact profile shows against the window. The camera is now focused until the outlines are very sharp, and the exposure—varying from one to five seconds, according to the intensity of the light—is made. The subject should be dressed in black or dark clothing, and one should look well to the arrangement of the neck adornment, so that no excrescences appear in the silhouette. The simpler the dressing, the more pleasing will be the outlines of the picture.

Carry the development far enough to give a



Jeanne Jandrier

Honorable Mention

very dense background, that will print white. If not dense enough for that, paint over with Gihon's Opaque or with lampblack in moist water-color. Print very deeply, so that the figure will be perfectly black with no detail. Wash; and instead of toning, fix in hypo solution made up in the proportion of 1 oz. of hypo to 10 oz. of water.

A very attractive way to mount these prints is to affix them to glass by optical contact, and back them with black photograph paper,—usually called needle paper,—leaving a margin of paper wide enough to turn over and fold down over the edge of the glass, making at the same time a binding and a border. If the print is just the size of the glass, put the glass over the print and bind with lantern-slide strips or with the black passe-partout binding.

To mount by "optical contact," soak the print for five minutes in a solution made of $\frac{1}{4}$ oz. of glycerine and 8 oz. of water. Have the glass perfectly clean, and polish it with French chalk. Lay the print face down on the glass, and with a rubber squeegee rub the print down carefully until all air has been expelled from between the glass and the print. If the first attempt should not be successful, peel the print off the glass and repeat the process.

The size of the silhouette should be rather small, after the manner of the old-time silhouettes

which used to be cut from black paper and pasted on a white background.

ANSWERS TO CORRESPONDENTS

F. D. S.—In order to make correct stereoscopic photographs it will be necessary for you to have a camera fitted with matched lenses. The lenses are usually mounted three and one half inches apart, and the exposures made simultaneously. The images are transposed when they are mounted.

BEN. L.—If discolorations appear on your velox and bromide prints after fixing, they may be removed by placing the prints for a few moments in a solution made of sulphuric acid, $\frac{1}{2}$ oz.; chrome alum, 1 oz.; water, 10 oz. Remember that sulphuric acid is very poisonous, and the greatest care must be taken in handling not to get any of the undiluted acid on the skin, as it will cause a painful burn.

DAVID W.—Amidol is an excellent developing agent, and acts much more rapidly than pyro. The image comes up very quickly, gains density rapidly, and has fine gradation of tones. The negatives are usually crisp and clear. A good formula is amidol, 20 grains; sulphite of soda crystals, 90 grains; water, 10 oz. If a plate is known to be overexposed, add a few drops of a ten per cent solution of bromide of potassium to the developer before immersing the plate in it. Amidol stains, so it is wise to use finger tips when developing.



Emma L. Williams

Honorable Mention

JAY F. H.—Prints should tone in a combined bath in from five to ten minutes. The smaller the diaphragm used, the sharper the picture; but the exposure must be prolonged according to the size of the stop used. The rule is to double the time of exposure for each smaller diaphragm inserted. If with an f. 11 stop, an exposure of one second is required, then with an f. 16—the next size smaller—an exposure of two seconds must be given.

F. R. EATON.—A simple vignetter may be made by taking an empty plate-box cover which is large enough to cover the printing frame, tearing a hole in the cover, pasting a piece of tissue paper over the opening, and placing it over the printing frame during the printing. Any size or shaped opening may be made, according to the negative from which the print is to be made.

ARTHUR SHELDON.—A “flat” picture is one that shows no contrast, and is due either to over-exposure and underdevelopment, to underexposure, or to false lighting.

W. A. HUBBARD.—When making interior views in which no figures are included, focus with a large stop, then use a small stop to make the exposure. For portraits use a medium-sized stop, and do not focus so sharply that every line in the face shows as if under a microscope. Focus sharply, then turn the lens a trifle from the plate, not enough to blur, but enough to soften the outlines and give roundness to the features.

C. W. P.—A solution of bromine will remove the traces of hypo from a gelatine film. Make a solution of bromine, 1 part bromine to 30 parts of water, and immerse the film in it for a few minutes. Wash and dry.

HARRIET K.—Clean your developing trays with a solution of muriatic acid, 1 ounce to 15 of water. Tie a rag to a stick, dip it in the acid and scrub the trays with it. After using the acid, wash the trays in good soap-suds, rinse, and dry. Be careful not to get any of the acid on the hands, as it burns very severely. If one is so unfortunate as to burn himself with acid, put sweet oil and lime-water on the burn as soon as possible. If sweet oil is not handy, use grease of some kind to prevent further burning, as the acid burns in if not checked with the grease. Water will not stop the further burning of the acid.

ADA S. T.—If the films are soaked for a few minutes in tepid water, they will straighten and lie flat in the developer. If you use plenty of developer, it is not necessary to hold the films down in order to keep them wholly submerged in the solution. The next time you purchase films, ask for non-curling films. These are coated on both sides and lie perfectly flat, like a plate, when placed in the developer. In drying them it is not necessary to put them in the glycerine solution, but do not pin them flat against

a board. Pin them to the edge of shelf, so that neither side will hit anything. They dry flat.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITION

SUBJECT for the January Competition, “Interiors.” Closes February 28.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: Five dollars in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

AWARDS

OWING to the necessity of going to press with this number much earlier than formerly, it was impossible to make cuts from the pictures awarded prizes in the “Harvest Scenes” competition for insertion in this number. The announcement of awards is therefore postponed until next month.

We publish this month three pictures from the “Child Study” competition, which was the most successful both in quantity and quality of work submitted of all that we have yet held. We trust that the pictures submitted in the next two competitions, “Interiors” and “Snow Scenes,” may be many and good.

SUBJECTS FOR COMPETITIONS

December.—“Portrait Study.” Closes January 31.

January.—“Interiors.” Closes February 28.

February.—“Snow Scenes.” Closes March 31.

March.—“Still Life.” Closes April 30.

April.—“Cloud Study.” Closes May 31.

May.—“Animal Study.” Closes June 30.

June.—“A Country Road.” Closes July 31.

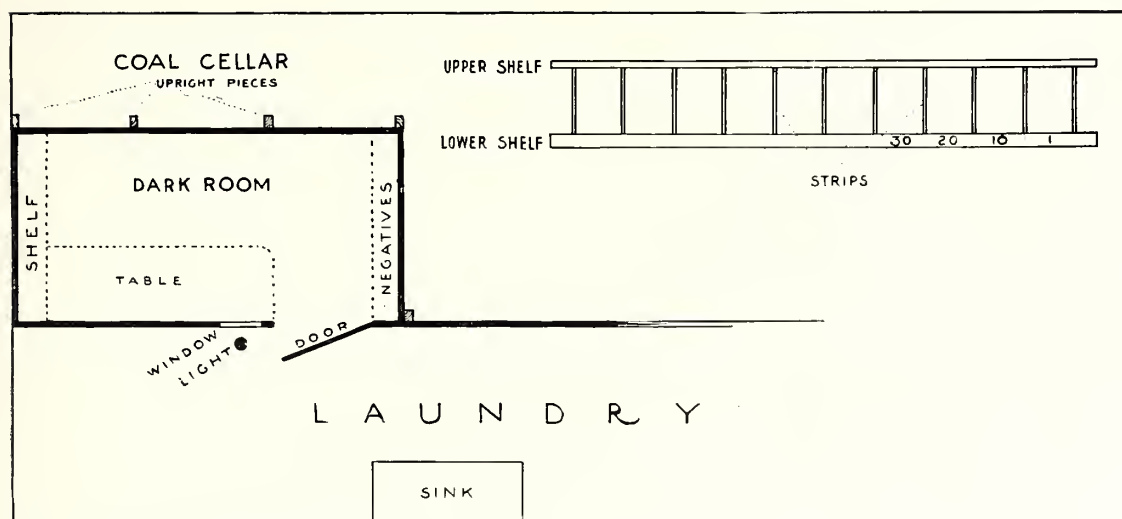
Special Competition.—“Old Acquaintances.” From five to ten character studies, preferably illustrating the inhabitants of “Our Village,” mounted on a folder which closes like a book. Closes March 31, 1905. Prizes \$10 and \$5, awarded only to satisfactory collections.

HINTS INTERCHANGE

AN INEXPENSIVE DARK ROOM

William Spanton

A dark room is like a telephone in a house, — not indispensable, but very convenient. I did without one for three years, using the bathroom, but the carrying of chemicals and utensils back and forth consumed considerable time. A year ago I decided to make a dark room in the cellar. The location, of course, will be determined in every case by the arrangement of the cellar. Mine is divided into four parts, separated from each other by wooden partitions. The laundry and coal cellar are side by side. I cut a door



in the partition between the two and built the dark room in the corner of the coal cellar, thus having to build up only two sides. From the grocery I secured the boxes necessary, "Force" boxes being the best, as the lumber is nice and smooth and of a good length. From a neighbor, who was making some alterations in his house, four pieces 2 x 4, and long enough to reach to the ceiling, were secured. The floor and side pieces were put in shape, then the floor put down and the siding nailed on. The boxes were used for the siding, but the floor was made of heavier stuff; $\frac{3}{4}$ in. lumber should be used. I spaced the 2 x 4's so as to accommodate the boards with as little waste as possible. The boards were nailed on so that the upright pieces came outside the dark room, thus making the inside smooth. The inside dimensions of mine are 2 ft. 9 in. wide, 6 ft. long, and 7 ft. high.

The boards were fitted as closely together as possible, and then on the outside strips of paper were pasted over the cracks. The boards, however, dried out considerably in three months, opening the cracks and splitting the paper strips. I then got some heavy wrapping-paper and papered the room on the inside. A wooden elbow 4 in. square was fastened to one side as a ventilator. The door was made as near to one end of the room as possible; 8 in. from the door and 34 in. above the floor a hole was cut in the partition to take a 5 x 7 ruby glass.

This was fitted in a frame sliding in a groove, so that it can be opened and closed. Light is furnished by a Welsbach burner placed on the outside. Where there is neither gas nor electric light, a lamp with a reflector could easily be placed by the window. Beneath the ruby window a shelf 14 x 32 was placed, to hold trays during developing. At first I thought of having running water in the room, but as that would have entailed quite an expense for piping, and as the sink with

faucet in the laundry is only 12 ft. away, I did not put it in. It is an easy matter to carry plates or prints from the fixing bath to the washing tray in the sink, and the danger of any slopping in the dark room is obviated. A shelf above the table and two others at one end provide ample space for bottles, etc. At the other end, nearest the door, there is a rack for trays and an arrangement for storing negatives. Two shelves $7\frac{1}{2}$ in. wide were placed $5\frac{3}{4}$ in. apart. The lower shelf should be at least 1 in. thick, for glass plates are heavy. Strips $\frac{3}{8}$ in. wide were nailed $1\frac{1}{8}$ in. apart to the front edges of the shelves. This leaves a space between the strips sufficient for ten negatives in their envelopes. The spaces are numbered 1, 10, 20, 30, etc., as in cut. My negatives are numbered and indexed in a book. To find a given negative, all that is necessary is to ascertain its number. If it is 35, it would be the fifth one in the 30 compartment. My one shelf will hold 200 negatives. A bench 10 x 24 x 20 in. high does for a seat when developing, or a place to put paper and printing frame when printing. Strips are nailed on the door casing for the door to shut against, so as to exclude all light. A common hook fastens the door on the inside, and a wooden button on the outside.

All I had to buy were the hinges for the door, ruby glass, Welsbach light and pipe necessary to bring the gas over to the window, — a total cost of not over one dollar. For others the cost might be more or less, according to the lumber which would have to be purchased, fixtures for light, etc. There has been a marked improvement in the sweetness of my wife since I quit using the bathroom. I still use the bathtub, however, for drying my prints. After washing I stick them on the sides of the tub, face up, of course. As fast as they dry they drop down, and in the morning you have a "bathtub full of pictures," as my little girl says.

Notes and News

THE Belgian Photographic Association proposes to hold a salon and congress of photography during the months of July and August, 1905. These will take place during the celebration of the seventy-fifth anniversary of the independence of the kingdom of Belgium. Any desired information may be had by addressing the Secretary General, Mr. M. Vanderkindere, Palais du Midi, Brussels, Belgium.

THE CATHEDRALS OF SOUTHERN FRANCE. By Francis Miltoun. With ninety illustrations, plans, and diagrams by Blanche McManus. Boston, 1905. L. C. Page & Co.

This is a worthy sequel to "Cathedrals of Northern France" by the same author (reviewed in the issue of January, 1904, of the PHOTO ERA), and equally attractive in subject-matter. The volume is intended as a contribution to travel-literature, and forms a desirable companion to the regulation guide-book, especially if the tourist be a lover of churches. The author takes his willing reader to a grateful southern clime, where the conditions for admiring noble church architecture are more novel and enchanting than in cities of northern or mid-France. We do not, of course, find here the Gothic style as abundantly

represented as in the north of France, but instead the more picturesque Renaissance, the Romanesque, which partake of the character of the soil and the people of this section of Europe. To the art student we would say that in France the nation's first art expression was made through church building and decoration. The book is artistic in typography and binding, while the original illustrations by Blanche McManus interpret the spirit of the architecture, *ensemble* or detail, in a most effective manner.

A COMPLETE list of the winners of the medal of the Royal Photographic Society, "the blue ribbon of photography," has recently been published by the *Photographic News*. The most consistent winner was the late H. P. Robinson, who from 1877 to 1887 secured the honor eight times. After he ceased to exhibit in his own name, his son, R. W. Robinson, secured the medal four times before 1894, after which year both names disappeared from the list. In the early years we do not find any names which we recognize as American, but of late years the following Americans have won the medal: 1894, Rudolf Eickemeyer, Jr.; 1895, 1896, and 1899, Alfred Stieglitz; 1898, Mathilde Weil; 1902, Frank R. Fraprie and Frederick E. Ives; 1903, Carl E. Semon; 1904, Henry H. Pierce.

PHOTOGRAPHIC EXHIBITIONS AND COMPETITIONS

SOCIETY OR TITLE	DATE	ENTRIES CLOSE	INQUIRE OF
Boston Camera Club.....	Jan. 12-14, 1905	.....	H. M. Hames, 65 West St., Boston, England.
Scottish National Salon.....	Jan. 14-28	Dec. 31	W. A. Frame, 28 Bank St., Hillhead, Glasgow, Scot.
Third International Salon, Marseilles.....	Jan. 28-Feb. 12	Dec. 31	M. E. Astier, 11 rue de la Grande Armee, Marseilles, France.
Blairgowrie Photographic Society.....	Feb. 6-11	Jan. 7	W. D. M. Falconer, James St., Cottage Blairgowrie, Scotland.
Vienna Camera Club.....	Feb. 15-Mar. 15	Dec. 31	F. Matthies-Masuren, Halle, a. S.
Brooklyn Camera Club.....	Feb. 16-18	Feb. 4	C. M. Shipman, 776 Manhattan Ave., Brooklyn, N.Y.
Amateur P. A. of Victoria, Melbourne.....	Feb. 20-25	Jan. 30	F. W. Miscamble, F. I. A. V., 349 Collins St., Melbourne, Victoria.
Photographic Society of Ireland.....	April	.....	R. Benson, 3 Orwell Park, Rathgar, Dublin, Ireland.
Northern Photographic Exhibition.....	June	.....	F. G. Issot, 62 Compton Rd., Harehills, Leeds, Eng.
Salon and Congress of Photography, Brussels.....	July-Aug.	.....	M. Vanderkindere, Palais du Midi, Brussels, Belg.

GIVER	CLOSES	PRIZES
Burr McIntosh Monthly, New York (Outdoor Photographs).....	Monthly	\$15, \$10, \$5.
Burr McIntosh Monthly, New York (Freak Pictures).....	Monthly	\$10, \$5.
Photogram, Arundel St., Strand, London.....	Monthly	One guinea and half guinea
The American Boy, Detroit.....	Monthly	\$2, \$1.
National Sportsman, Boston.....	Monthly	\$5, \$3, \$1, \$1.
Browning's Magazine, Boston.....	Monthly	\$5, \$3, \$2.
The Book-Lover, New York.....	Monthly	\$5, \$3, \$2, \$1.
American Amateur Photographer.....	Monthly	\$5.
Western Camera Notes, Minneapolis.....	Monthly	\$5, \$3, \$2 in goods
Field and Stream (Sporting and Outdoor Pictures).....	Monthly	\$5, \$3, \$2, \$1.
Leslie's Weekly, New York.....	Weekly	\$10, \$5, \$1.
Buffalo Express.....	Weekly	\$5 to \$25.
New York Evening Mail.....	Weekly	\$5.
Commercial Advertiser, New York.....	Weekly	\$3, \$3, \$2, \$1.
St. Louis Star.....	Weekly	\$5.
Seattle Post Intelligencer (Western Scenes).....	Weekly	\$2.50, \$1.50.

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FRANK ROY FRAPRIE
THE GROTTA OF THE SIBYL, TIVOLI



PHOTO ERA

The American Journal of Photography

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THE PHOTO ERA PARTY ABROAD IN 1904

THE PHOTOGRAPHIC RESULTS

FRANK ROY FRAPRIE

As was definitely announced in the prospectus, the object of our European tour last summer was to induce American photographers and art students generally to utilize the boundless opportunities available for picture-making in the old world. The itinerary was specially planned with this end in view and a special prize was offered for the best set of pictures submitted by any member of the party. It was understood that the set should number not less than twenty-five nor more than one hundred pictures mounted on cards of uniform size, and that the photographs should be made by some permanent process, as platinotype, carbon, bromide or gaslight paper. The judgment of the photographs was to be made on the grounds of artistic merit, technical skill and suitability for reproduction. The award has been made and we present to our readers this month a large selection from the pictures taken by Mr. F. H. McClure, the winner of the prize for the best collection submitted. We also publish several pictures by other members of the party. All of these pictures show well what artistic results can be obtained with the most simple apparatus, for every one of them was made with a compact hand camera, and the majority were made without the use of the tripod. The subjects are such as are accessible at all times and in all places to every traveler, and the makers must be congratulated on their happy choice of subject and conditions. There is good reason for such congratulation, for these pictures stand far above the ordinary snap-shots taken by the casual traveler. Some of them reach a level much higher than one might reasonably expect. For instance, Mr. McClure's "Temple of Saturn," on page 53, portrays a scene which has been photographed thousands of times by both professionals and amateurs. Yet in all the many pictures of the subject which we have seen, there is none which excels this for happy choice of position, choice of lighting, and composition. Again in his picture of the "Caryatid Porch of the Erechtheum," on the same page, he has made a picture in the face of great obstacles. The Erechtheum is at present being reconstructed from the original stones which have lain scattered on the top of the Acropolis, and the building is a pile of scaffolding to the casual glance. Yet the maker has carefully chosen the one spot which would give an adequate representation of the porch, and leave the ugly scaffolding out of the picture.

Another very fine picture is that of a courtyard with an old font at Bologna, shown on page 44. The maker has here produced a very fine architectural print, well lighted and well composed. The picture gives no hint of the cramped quarters in which it was taken or of the difficulty experienced in finding the point of view where cloister pillars did not interfere, nor incongruous objects intrude.

The group of pictures on page 41 is worthy of special notice. All have suffered in reproduction and reduction, especially in atmospheric qualities, but still give a good idea of the maker's skill. In the first the artist has taken a snap-shot in a crowded street, choosing his opportunity to avoid intrusive vehicles and pedestrians in the foreground, and at the same time getting the



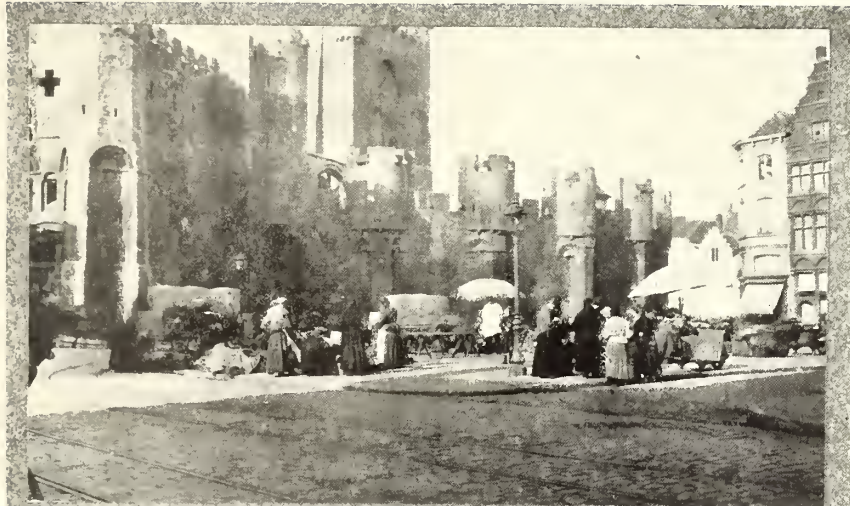
F. H. McCLURE

THE MATTERHORN FROM THE GÖRNERGRAT—IN THE PARK AT VERSAILLES

proprietors and patrons of the market stalls in characteristic positions. Behind all rise the stern battlements of the ancient palace and fortress of the Counts of Flanders, and the picturesque stepped-roof houses of old Ghent. The next picture transports us to Switzerland and shows us the village of Simplon bathed in noontide sunlight, and dominated by the snow-flecked Alps of mid-August. The atmosphere is well rendered, and the differentiation of the planes of the near and distant peaks is well done. The two peasants bearing home on their shoulders their scanty and precious crop of hay add an irresistible note of pathos, bringing at once to our minds the terrible struggle with iron winter which here succeeds the glorious but fleeting summer. Again, the next picture carries us far away, showing us the Villa Mylius on Lake Como, bathed in the eternal Italian hazy sunlight. In the original there is a wealth and beauty of detail, a differentiation of texture and distances which is marvelous, and which can be in part appreciated from the cut; but what we especially desire to emphasize here is the happy arrangement of lines leading to the central interest, and the fact that even the figure and the boat, subsidiary notes well introduced, lead our attention also, by indication of direction, to the villa itself, with its wonderful garden.

On page 43 we find a collection of Venetian water scenes. Here again, especially in the picture of the Rialto Bridge, is composition the principal aim of the maker. In every instance he has placed his gondola in the correct position and the gondolier in a characteristic attitude, — a feat the difficulty of which only those who have attempted it can realize.

Another example of good composition will be found in "The Fountain of Arethusa," on page 47. Here, the basin itself and its papyrus being rather inadequate as a subject, in spite of the legendary and historical interest of both, he has cleverly introduced the pedestal of a flower



F. H. McCLURE
 MARKET PLACE AT GHENT
 THE VILLAGE OF SIMPLON
 VILLA MYLIUS, LAKE COMO





F. H. McCLURE

VENETIAN SCENES

urn in such a way as to create a graceful and interesting composition. The companion picture shows a water-carrier at Assisi, and is attractive because of the glimpse of Italian life and customs which it gives us.

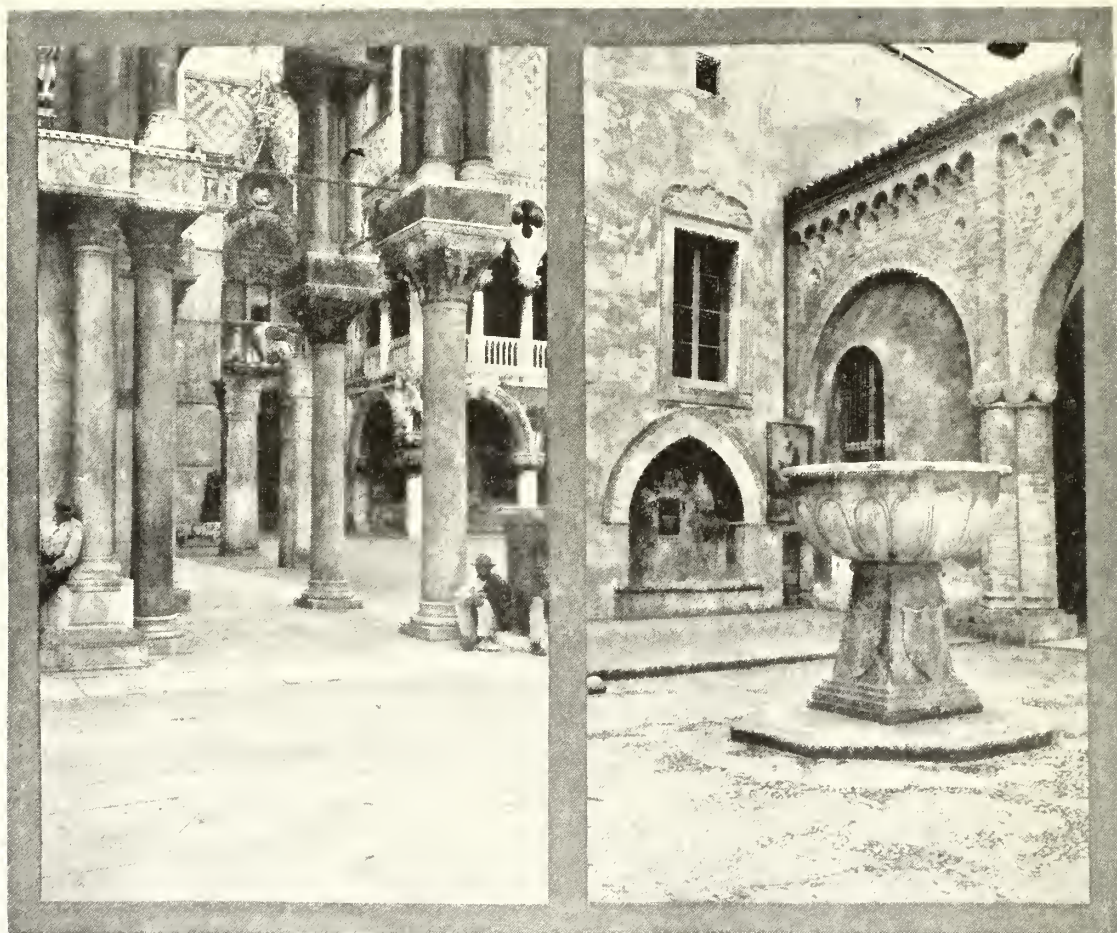
Passing now to page 57, we find ourselves in the Orient, for it is a singular fact that the modern Greeks count themselves among the Asiatics in a way, speaking of a traveler to Italy or Austria as one "gone to Europe." At the top of the page we find ourselves in the harbor of Nauplia, and the picture of the island fortress, built as a bulwark against Turkish raider and Christian pirate in the palmy days of the island empire of Venice, gains double beauty by the introduction of the snowy-sailed lateen boat at exactly the proper place in the foreground. The bottom picture gives us a glimpse of the meeting-place at Mycenæ, where the valiant Agamemnon harangued the Grecian chiefs before the siege of Troy, and where, years later, discredited and disgraced, dead of sorrow, as we may perhaps imagine, he was buried in haste and secrecy by a few faithful followers, but even then with a treasure of gold, which for beauty of workmanship and fabulous intrinsic value would put to shame the treasures of many a prince of modern times. The curious double walls shown are characteristic of this place alone, and are still a puzzle to the archæologist. Finally, the central picture gives us, by contrast with the human figure, and by the sense of tremendous height implied in cutting off the columns so near their bases, a faint idea of the grandeur and impressiveness of the remains of the Roman Temple of the Olympian Jupiter at Athens. These columns are in fact so large that a hermit once built him a hut and lived in comfort for years on the capital of one, till, one unhappy morning, extending his morning stroll too far, he fell to his death on the hard flags far beneath. Their very size, however, makes their picturing almost impossible, and this, of all pictures I have seen, alone gives some idea of their bulk.

In this way I might go on, criticizing picture after picture, and calling back the memories they invoke for those who have seen the places; but space forbids that I should give a detailed criticism of each. Suffice it to say that they all show some strong quality, and that there is none which could not be duplicated by every photographer who reads these lines. Every picture was made with a hand camera, on a film, and developed in the kodak developing machine.



F. H. McCLURE
 THE GRAND CANAL, VENICE
 THE DOGANA AND S. MARIA DELLA SALUTE, VENICE
 THE RIALTO BRIDGE, VENICE





F. H. McCLURE

ENTRANCE TO DUCAL PALACE, VENICE—FONT, S. STEFANO, BOLOGNA

Every print is direct from the original negative, without retouching or hand work. In fact they are all straight snap-shots, in spite of which they are full of artistic feeling.

We contend that the making of such pictures by the small party who took our trip last year is a proof of the educational value of the European trip for all photographers, and we have made arrangements to repeat the tour this year. We shall have not one, but two expert photographers, and experienced travelers as leaders, and are thereby enabled to offer a variety of routes which will appeal to all tastes. We publish on another page a full description of these routes, and trust that all interested readers will not only look them over carefully, but will write us their requirements if they do not find their own views and plans fully met. We hope that not only our friends of the sterner sex, but also some of our women readers, will take this invitation as extended to them. One lady was of our party last year, and we expect several will go with us this summer. Our trip, although designed to afford special opportunity for picture-making, is ideal for every one who wishes to see Europe; and our leaders, and the specialists in art, archæology, history, etc., whom we have at our command through our relations with the Bureau of University Travel, can make the trip most useful and attractive to any of your neighbors and friends who may desire to go, whether or not they use a camera. The prices are as low as they can be placed, considering that we meet every calculable expense of travel, leaving absolutely no extras to be met by the traveller. While this apparently makes our trip more expensive, we have found that any other way is misleading, and that it is far better to know definitely the whole cost in advance.



F. H. McCLURE
 FISH BASKETS, CHIOGGIA
 OUTSIDE THE WALLS, S. GIMIGNANO
 AN ITALIAN HILL TOWN



PINACHROMY

CONCERNING THE LIGHT SENSITIVENESS OF THE LEUKOBASES OF ORGANIC DYESTUFFS AND THEIR APPLICATION TO THE PRODUCTION OF PHOTOGRAPHIC PICTURES

DR. E. KOENIG

While the leukobases of some classes of organic dyestuffs—for instance, the safranines—are so oxidizable that they cannot be isolated in a free condition, there are others—like the leuko-malachite-green—which can be easily produced, and which are comparatively unaffected by the atmosphere. Many chemists have undoubtedly observed that these most permanent leukobases, after having been kept for some time, will color particularly strongly when exposed to light. More exact investigations concerning the light sensitiveness of leukobases have been made only by Gros in Ostwald's laboratory, and he has tested especially the leuco-compounds of fluorescein and its substitution products. He has determined that the leuco-compounds, produced in a rather crude manner, are generally more or less light sensitive, and has measured the quantity of oxygen absorbed in the light by the aqueous solution of the leukobases, and their respective salts.

No one else seems to have made investigations of this kind, with the idea of using leukobases in the production of photographic pictures.

Before coming to the subject proper, I would like to touch in a few words on a purely photographic field. The principle of three-color photography we may suppose to be generally known. Three part-negatives are produced from the subject to be photographed, of which one, under the printing frame, gives only the blue; the second, the red; and the third, the yellow parts of the subject.

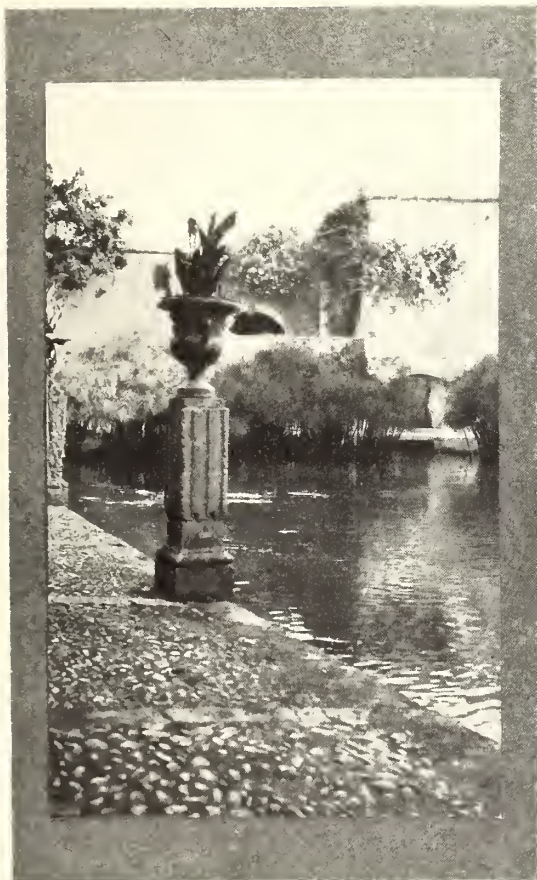
The production of such negatives is simple enough, and the principal reason why three-color photography, which is of the greatest importance in the graphic arts, has not yet been commercially applied, is to be looked for in the want of a suitable printing process.

I will not detain you with a description of the different printing processes, but mention only that all methods hitherto used are based upon the light sensitiveness of gelatine mixed with bichromates; either the print is made upon paper already colored with pigment, or the gelatine pictures, first colorless, are colored with some organic coloring matter. The three one-color part pictures, produced in whatsoever manner, are united into one picture, which will then reproduce all the colors of the original. There is no doubt that in this way handsome three-color pictures can be obtained; but the production of the pictures is so extremely difficult that few are able to produce acceptable colored prints. Not the least difficulty of the old methods is the impossibility of following the progress of the printing process with the eye.

An ideal printing process for three-color photography would evidently be one in which neither is color previously applied, nor printing done upon colored paper; a process that requires only colorless films, which, upon exposure, according to their preparation, will color directly yellow, red, or blue. Searching for such a printing process, I experimented with all the different leukobases, but very soon found out that the leukobases themselves, when exposed to light, are not capable of giving strong and brilliant pictures. I then used the leukobases in a coating of acetylhydrocellulose, or gelatine, but my hope of thus obtaining stronger pictures was not fulfilled.

Only after selecting collodion as the emulsion basis did an immense increase in the light sensitiveness suddenly show itself. Leukobases which, when exposed for hours to light, gave only an extremely weak coloration, were, in presence of collodion, rather strongly oxidized after a much shorter exposure, and gave pictures that could be used.

It was soon quite clear that the collodion could not act in this case solely as an indifferent medium, and that the leukobases were oxidized in light at the expense of the nitric acid groups of the nitrocellulose. I investigated a large number of other bodies and found that, like nitrocellulose, all nitric acid esters, particularly those of pure alcohols, will react. The nitrous



F. H. McCLURE



FOUNTAIN OF ARETHUSA, SYRACUSE—WATER CARRIER, ASSISI

acid esters, on the contrary, and the isomeric nitro bodies of the aliphatic and aromatic class, are ineffective. The nitrosamines show results similar to, although weaker than, the nitric acid esters.

It is interesting that the light sensitiveness of the mixture of nitrocellulose and leukobase can be considerably reduced by urea or antipyrin. This observation seems to point to the fact that the leuko bodies are really oxidized by nitrogen oxides, which separate from the collodion.

An addition of oil of turpentine or anise oil, which are considered as oxygen carriers, does not act, or at least not sufficiently to be noticeable, in accelerating the formation of pictures by light; but when I added to the solution of the leuko bodies in collodion several organic bases, with the intention of preventing the atmospheric oxidation, to which some leuko bodies are subject, I was surprised to observe that the films containing chinoline and its homologues showed considerable increase in their light-sensitiveness. An explanation of this remarkable phenomenon I cannot give. It is evidently a catalytic process. Chinoline is principally effective on the leukobases of the blue and green triphenylmethan coloring matters.

Nitrocellulose is by no means the most effective of the previously mentioned compounds; it is particularly suitable for the production of the pictures, only because it produces at the same time the film which is to carry the picture. Still more light sensitive are the mixtures of the leukobases with the nitric acid esters of glycerines, glucose, and mannites.

If a piece of blotting-paper is soaked with an ethereal solution of, for instance, leuko-malachite-green, or leuko-flavaniline, it will hardly color with a short exposure, but if a little nitro-mannite is added, the paper will be colored rapidly and intensely in the light.

The light sensitiveness of the mixtures of leukobases and nitrocellulose can be considerably increased by addition of nitromannite. I have two pictures, one of which is much stronger than the other. The exposure of each was twenty seconds in sunlight. The light-sensitive film consisted of nitrocellulose, leuco-setocyanine (ortho-chlorotetraethyldiamidotriphenylmethan) and chinoline. For the first picture a small quantity of nitromannite was added to the film.

I would emphasize the fact that it is quite impossible to produce any photographic picture fit to use with leukobases alone, or with leukobases embedded in indifferent films. The prints will always be flat and weak. The oxidation of the leukobases in the light by the oxygen of the atmosphere seems to reach a maximum rather quickly, long before the whole quantity of the leukobases is oxidized.

Bodies which are properly not leukobases in the ordinary sense also become oxidized to coloring matters by light in the presence of nitric acid esters, — as, for instance, paramido-diphenylamine. This base is used for the production of oxidation black in calico printing, and rapidly gives very intense colored pictures when mixed with collodion or similar bodies and spread on paper.

Blue pictures can be produced with the medium of ortho-chlorotetraethyldiamidotriphenylmethan; green pictures with leuco-malachite-green, with metanito- or metamidotetraethyldiamidotriphenylmethan; red ones with paraleukaniline or leukorhodamine; violet with hexamethylparaleukaniline; yellow ones with leukofluorescein and leukoflavaniline.

The fixing of the pictures offered, in the beginning, many difficulties. Some leukobases, true enough, can be dissolved from the collodion film by benzol, toluol, ether, or chloroform, but none of these can be applied for practical purposes. The next fixing mediums which suggest themselves are dilute mineral acids, in which almost all the leukobases will dissolve. Still, the pictures could not be fixed in this way, because the leukobases, like the coloring matters, show a certain relationship to nitrocellulose, and form stable compounds with it. With diluted organic acids I had better success in fixing; and monochloroacetic acid finally proved to be the best fixing medium for almost all leukobases. Acetic, dichloroacetic, and trichloroacetic acid cannot be used.

Gros has already investigated the action of the leukobases towards light of various colors and determined, in a general way, that, with most leukobases, the maximum effect is produced by radiation with complementary colored light. The least effect he obtained under red glass, the strongest under pink. I exposed the different sensitive films with color filters, as usual in three-color photography, and found that the exposed parts showed a maximum intensity under the complementary colored filters and a minimum of intensity under similar filters. Thus blue, green, and violet are colored very strongly under red and yellow; under blue, very little. Red is colored very strongly under the green and yellow filters, very little under blue, and under red not at all. Yellow finally becomes very strong under blue; while under yellow it changes only slightly.

The strong action of the so-called non-actinic red upon the blue and green light-sensitive films is very interesting, and can be explained in this way, that the original coloring matter itself acts as sensitizer.

Ostwald has already pointed out the fact that the action of light upon photographic preparations is not at all uncommon, and that light promotes actions which continue of themselves long after the light has been excluded. In this way, as is well known, many photographic preparations which have been kept for a long time are decomposed in the dark, particularly light-sensitive gelatine mixed with bichromate. With our new light-sensitive film the same thing happens. The action produced by light in a few seconds or minutes takes place in the dark after hours, days, or weeks. The most light-sensitive films are also the least durable in the dark, so that they always have to be prepared shortly before use. I will remark, however, that the films, even if kept for a long time in the dark, will never color so deeply as in a short time in the light.

The application of these observations to three-color printing would be as follows: A sheet



F. H. McCCLURE

PORTA ROMANA, SIENA—GOSSIP, ASSISI

of paper is coated with blue collodion and exposed to light under the corresponding part-negative. When the blue picture appears sufficiently strong, it is fixed in a 10 per cent solution of chloracetic acid, washed, coated with a thin, hardened, gelatine film, and dried. The gelatine film serves to protect the first collodion coating from dissolving when the second one is put on. The dry blue picture is then flowed with red collodion and the corresponding part-negative is so placed that the outlines of the negative exactly cover those of the blue picture. Expose again to light, fix, wash, and finally produce in the same way the yellow picture.

On account of the complete transparency of the very thin films and the brilliancy of the color applied, the prints are very satisfactory.

The necessary quantity of the leukobases is very small in consequence of the enormous productiveness of the triphenylmethan dyestuffs, so that a picture composed of the three colored films will hardly be more expensive than an ordinary gum or pigment print.

The permanence of the pictures in light is naturally not absolute, although relatively fast dyestuffs are used for the production of the part-pictures. The poorest is blue, although this surpasses the so-called blue-prints (cyanotypes) in permanence.

If the difficulties which hamper the printing of three-color negatives are taken into consideration, this new printing process, designated as "Pinachromy," should be looked at as an extraordinary progress. Colored diapositives have been produced with comparative ease, but three-color photography could not become popular so long as it was not possible to produce prints in a simple way. That, I believe, can be done by this printing process.

THE CAMERA IN THE LUMBER WOODS

JOHN BOYD

When the camerist undertakes a trip into the fastnesses of the virgin forest, he ought to be ready to meet all emergencies as they arise; but if he can forestall these troubles by anticipating what he will be obliged to overcome, and have the necessary means at his command, he can certainly put on a better front to his perplexities, for an ounce of forethought is worth a ton of the other kind.

The aim of this article will be to point out some of the things that the photographer will have to contend with when he has "hit the trail," and left the steamboat or railroad train behind.

Before we start, I shall assume that we are going in for straight, honest photography, and that the hit-or-miss snap-shooter will pursue his calling in other fields and at other times. I shall also assume that the worker is to use glass plates, for if films were the medium, the precautions to be taken would not be as numerous; but as yet we are not all converted to the use of celluloid as the best support for carrying the sensitive emulsion.

First of all, the camera should be thoroughly gone over, to see that all the parts are in working order; the inside of the bellows dusted carefully, and examined for holes; the lens delicately cleaned with some of the prepared tissue paper to be had of any first-class optician; the shutter working free, and opening and closing in the time given by its various speed markings; all plate-holders light tight, with the spring leaves in the slide-slots closing quickly after the slide is withdrawn; in fact, no portion of the outfit can safely be overlooked.

The following articles should find a place in the equipment: a rubber focusing cloth, which is a necessity for obvious reasons; an extra ground glass; at least three double plate-holders; an empty plate box, wherein to put the first exposed plates; a camel's-hair brush; some anti-septic court plaster; a pocket tool set; some paraffin paper; a changing bag, to make you independent of places wherein to renew the contents of your plate-holders; a plentiful supply of plates in their original boxes; and a strong, rigid tripod.

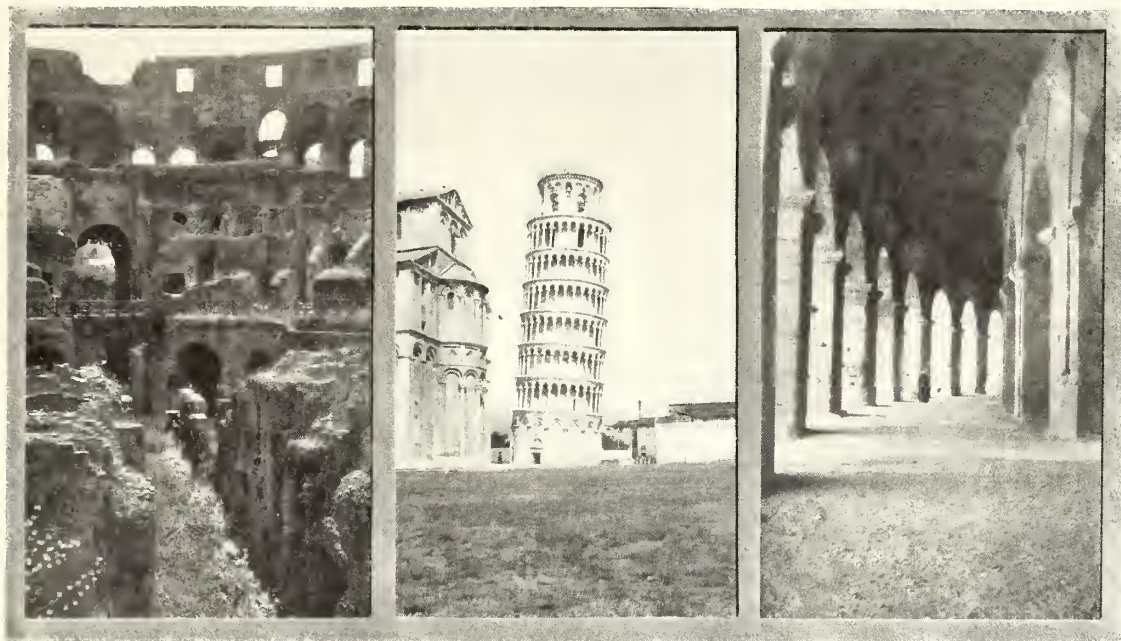
If the trip is not to be a protracted one, the supply of plates had better be carried in a hand satchel; if the weight of these is too great, we must have recourse to a trunk, but I have a decided aversion to recommending this plan. Still, if it must be done, see that they are placed in the middle compartment, with each box wrapped in corrugated cardboard, and the whole snugly packed with excelsior. A further precaution is to personally see to the handling of the trunk, and if a small tip is added to a pleasant word, you will receive every attention from porters, baggagemen, and teamsters.

We will now suppose we have left behind the evidences of civilization, and are on the "tote" road, which in the level spaces is made up of logs laid corduroy fashion across the wagon trail; in others, runs up or down clay hills or rocky ledges, at angles ranging from 40 to 60 degrees, with boulders sprinkled freely in all directions. This is indeed a mild description of some of the paths that lead to glory — I mean the woods. It is no exaggeration to say that the "tote" wagon can stand almost anything, but that does not mean that your outfit will stand unbroken as long a siege as the wagon; therefore take every precaution that can suggest itself to preserve intact such fragile articles as the photographer must necessarily carry into the woods.

If you should have to go over this sort of a road, don't fail to carry at least your lens and shutter on your person, for sooner or later the jolting of the wagon will ruin the cementing of the lens and disarrange the fine mechanism of the shutter. Even on railroads, the vibration in passenger coaches has been known to cause the lenses to separate.

Of the work to be done in the woods I shall speak later, but will first take up some of the troubles that may meet us in the wilderness, and how we can best overcome them.

We have before advised an extra ground glass, but even it may get broken. The quickest remedy is to sacrifice a plate, as it is always at hand, and will do fairly well in bright



F. H. McCLURE

THE COLOSSEUM, ROME—THE LEANING TOWER, PISA—THE COLOSSEUM

light; but a better plan is to clean off a sheet of glass, and iron on a piece of paraffin paper, and therefore a sheet of the latter is recommended to a place in the kit. If either makeshift is used, don't judge the exposure from the image on the screen, for one will be darker, the other lighter, than the ordinary ground glass.

The changing of plates is a problem that often looms up as a mountain of difficulties, but with a changing bag such as I shall describe, you are ready at any hour to keep on with your work with hardly any interruption. I have used one for years, and it serves me as well for a focusing cloth or a wrapper for plate boxes, as it does for the function it was originally planned to perform. To make it, take 4 yards of black silesia at 5 cents a yard; double it evenly, which gives us a piece 2 yards long by 1 yard wide; fold this again, and sew up the sides, leaving the bottom open. Cut a round hole 6 inches in diameter in one side, and about halfway up from the open end of the bag. This is for the window, to complete which, you will sew in one thickness each of canary and ruby fabric, obtainable at any supply house for 10 cents. Run a strong cord, 3 yards long, between the folds around the open end of the bag, so that by pulling it tight you can close the opening, and vice versa. To use it, get together your plate boxes, holders, and camel's-hair brush; sit down with these on your knees, place the bag over your head, the window facing to the front; lift up your vest, and draw the cords tight together, tying them inside; let your vest drop down again, and you are all ready to go to work. This bag will go readily into the coat pocket, and is a convenience which, once used, will never afterwards be left behind, as it does away with the need for a ruby lamp in dark closets, sweating under bedclothes, or other similar shifts.

A note-book for exposure facts and subject is a valuable help; and if you number your plate-holders, it will be easy, when making the change, to pencil on one corner of the plate the consecutive number of the exposure, corresponding to the one in your book. Here let me add a word of caution: don't use any old paper that comes handy, to separate your plates after exposure. If you can, replace them with the strips that come from the factory between them; but if these are not available, just put them back in their original packages, face to face.

Should your bellows get punctured, dig down in your kit, and patch the hole with a small

piece of the antiseptic plaster; the same little packet will also come in handy in holding together a cracked ground glass, or mending other parts of human and photographic bodies.

If you have occasion to let your outfit go out of your sight, you had better lock up the plate boxes and holders, as the "Lumber Jacks" have inquisitive minds, and like to see the "insides" of any contrivance with which they are not fully acquainted.

The carrying of the camera and tripod from place to place is sometimes trying, especially if one has a large-sized outfit. My plan is to have straps attached to the carrying case, so that it may at will either be taken in the hand, or slung over the shoulders; the tripod is also placed in a cloth case with loops to it, so that it too can go over the shoulders — thus leaving the hands entirely free. The latter is often a necessity in ascending or descending hills, crossing streams on fallen trees, and more especially when working in damp places, as the outfit can be kept entirely off the ground, when setting up the camera, and making the exposure.

I will now dismiss the thought of trouble ahead, and say something about the work in hand, and how to go about it.

It will be impossible to tell you what you will find in the wilderness to photograph, but if a suggestion on the line of action will assist you in determining what will prove interesting I would at once say, begin by making a set of negatives picturing the lumber trade, from the tree to the drive. All are capable of being photographed, and amongst them the following may be had: The main camp; men's quarters at meal hours, and at night when the fiddle rasps, and the smoke is thicker than a bush fire; road making; undercutting a tree; sawing down a tree; cutting it into logs; tonging the logs to the skidway; decking a skidway; watering the logs; winter and summer roads; driving logs over a rapid; tailing up those stranded on the banks; making up a boom; not forgetting the various falls and picturesque spots on the way, etc.

If one gets the spirit of the woods, his subjects will come as fast as he can work his outfit; and if he is desirous of making expenses, he will find that his pictures can be disposed of in large quantities, and at good prices.

When a trip like the one I have outlined is contemplated, the first thing to be done is to get permission from the superintendent, or other officer of the concern, in whose limits you expect to work. This will invariably be granted to any responsible person, and it usually carries with it the right to stop at any of their camps without expense for board or lodging; the privileges thereby obtained should be reciprocated to the officer by presenting copies of all prints made. A small remembrance to the cook and clerk of the camp, the latter two being the parties usually inconvenienced by the increase in rations and bunk accommodation, will also help you to get acquainted with the best subjects, and pave the way for any other favors you may wish to secure.

As you will need human subjects all through your work, don't let the "Lumber Jacks" waste time in "posing" for you. They are all paid by the month, and are ever ready to get away from the monotonous work they are at, and will sometimes thrust themselves upon you. At such a time, be wise, and thankfully decline their offers, unless you have the permission of the foreman or "walking boss." The latter individual is apt to be a very matter-of-fact person, devoid of sentiment, poetry, or art, and if you interfere in his plans for getting his logs out at a certain rate per thousand you may have to "sling your turkey" before your time — in other words, you will receive a plain hint you are expected to leave the premises at once. In such cases, your "official" order will avail you not, for who is greater in the bush than the "walking boss"? On the other hand, if you plainly tell him at the start what you are after, and ask his assistance, no trouble will be too great for him to go to, in order that your every wish may be granted. I mention these little things, so that the novice in the bush may the more readily "get on" to the unwritten ethics of the backwoods, and save himself the humiliation of being told in a plain, frank way that he is "not well enough bred for the bush."



F. H. McCLURE



CARYATID PORCH OF THE ERECHTHEUM, ATHENS—TEMPLE OF SATURN, ROME

WHY I LIKE KODOID PLATES

WM. S. RITCH

In the practice of home portraiture, making from one to five dozen negatives during a day, I have found kodoid plates so saving of time and labor, besides giving such beautiful soft effects in the finished print, that I have written the following as the result of my experience for the benefit of others who may not have tried them.

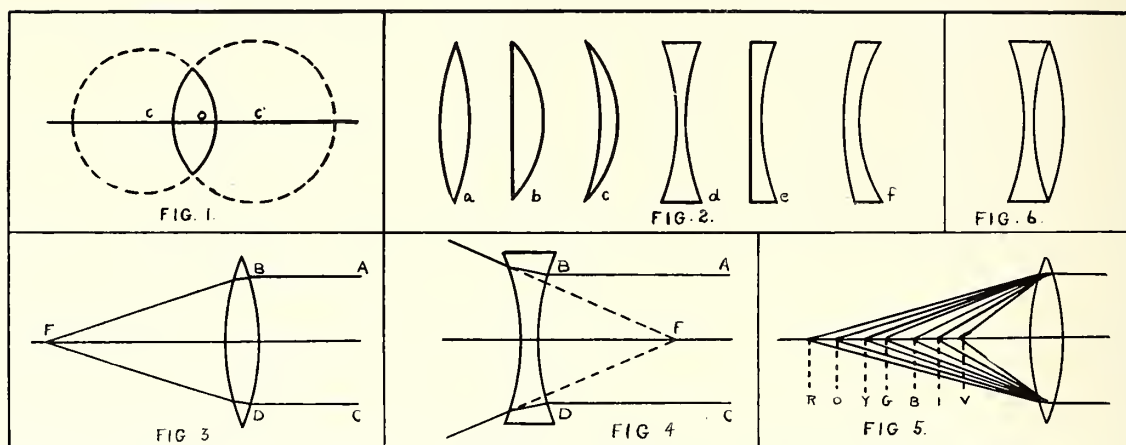
In the first place, five or six dozen kodoid plates can be carried about all day with my other apparatus, with perfect ease, while the same number of glass plates would be quite a burden.

In developing, I slip one plate into the developer, rock the tray a little until exposure is found to be about normal, turn the negative over, and let it develop face down, while another is slipped in to develop face up. Covering that tray with a board, I place another tray on top and slip in two more negatives, finishing the whole four in fifteen to twenty minutes.

In fixing and washing I treat them the same as prints, putting as many as wished in a large tray of hypo, and washing in ten or twelve changes of water, making wash boxes and fixing boxes unnecessary.

I find the surface of kodoid plates much easier to retouch than the hard surface of glass plates, the texture being more like drawing-paper.

Printing may be done from either side, making a reversed image if desired, or obtaining the correct picture in carbon with a single transfer.



Best of all, the non-halation and orthochromatic properties of kodoid plates give the finished print a delicacy and softness beyond comparison with prints made from negatives on glass; especially is this so in subjects of much contrast.

Last, but not least, is the keeping and filing of negatives. How often have I hunted for a certain glass plate, looking through the whole batch to find it at the end. Perhaps others may keep their negatives filed and in order, but I never felt like spending my time that way. With kodoid plates I can put all of one subject in an envelope together, and while using for printing, etc., can lay them around anywhere without danger of scratching or breaking. After work is finished on them, the envelopes can easily be put away, arranged alphabetically, as there are very few of them compared to glass plates, where each plate must be put in a separate cover.

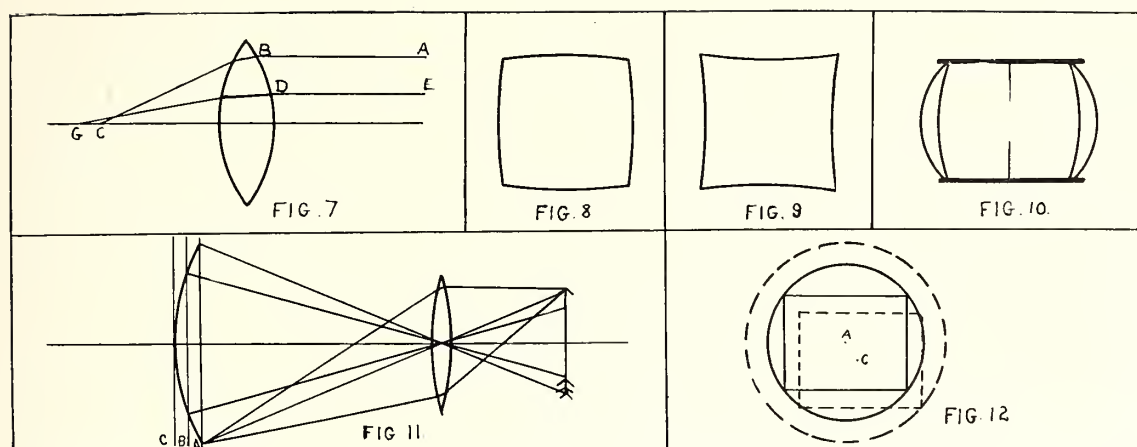
On the whole, the non-halation and orthochromatic qualities of kodoid plates make them all that a plate should be, while the ease of keeping and filing the finished negative has saved me no end of trouble, to say nothing of the other advantages of light weight, fixing, washing, and retouching. I have never yet scratched a kodoid plate.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

SECOND PAPER—LENSES

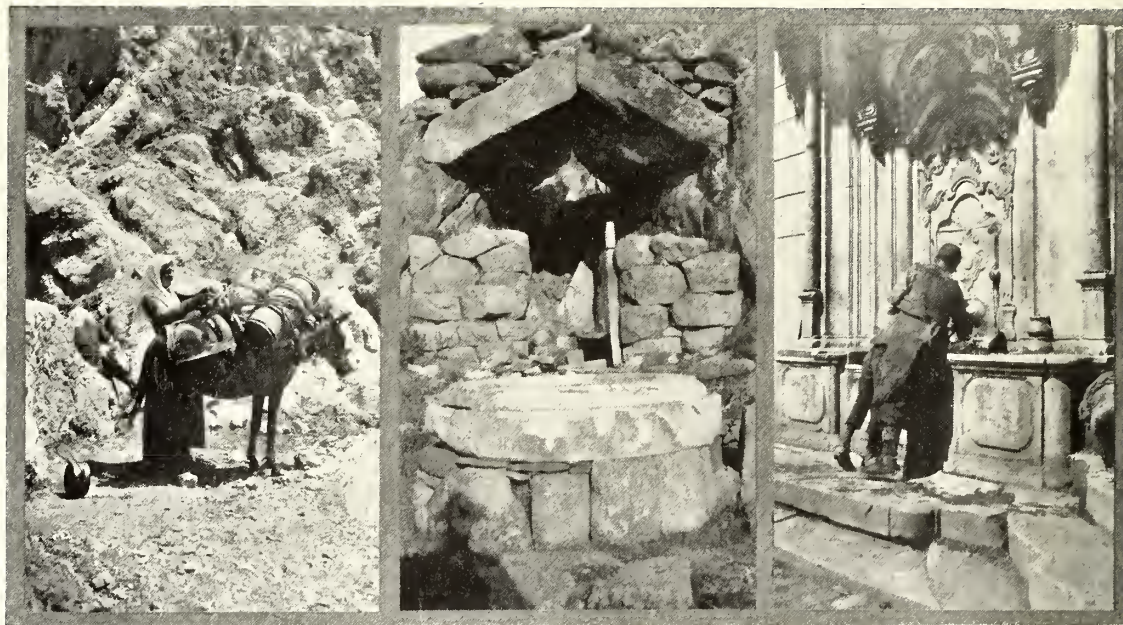
1. *Simple Lenses.* — A lens is a portion of any transparent substance, usually glass, with two surfaces, either both convex or concave, or one plane and the other convex or concave. By varying the shape of the lens the rays of light can be made to pass through it in almost any desired direction, so as to form an image of the objects in front of it on a plane surface placed at the point of focus. At least one surface of every lens is a portion of a sphere the center of which is called the “center of curvature” of the surface, as C and C', in Figure 1. The line connecting the two centers is called the “principal axis” of the lens. There is a point in every lens on the principal axis, either at or near its center of volume, so situated that rays of light which pass through the lens at this point suffer no change of direction. This point is called the “optical center” of the lens (O in Figure 1), and the rays passing through it are called “axial rays.” If the surfaces of the lens are equal in curvature, the optical center lies midway between them. It is readily seen that changing the position of the centers of curvature will change the shape of the resulting lens and vary the direction of a ray of light refracted through it. As a result of this fact there are six primary lenses, shown in Figure 2, which are used in manufacturing photographic lenses. The names of the lenses are as follows: Positive or converging lenses;



(a) double convex, (b) plano-convex, (c) convex meniscus; negative or diverging lenses; (d) double concave, (e) plano-concave, (f) concave meniscus.

A lens may be considered as a pair of prisms placed either base to base or point to point, of one piece of glass, and with one or both of the surfaces curved. When a ray of light passes through a lens, it is bent by refraction towards the thickest part of the lens, so that there are two classes of lenses: converging and diverging. Reference to Figure 3 and Figure 4 will show this. The convex lenses, of which one is shown in Figure 3, are converging, while the concave lenses are diverging, as shown in Figure 4. The focus of a convex lens is real, *i.e.*, the rays actually pass through it, and form an inverted image of the objects before it. The focus of a concave lens is virtual. Parallel rays of light are bent toward the thick portions of the lens and become divergent after refraction, appearing as if they had come from a focus (F in Figure 4) on the same side of the lens, along the backward prolongations of the emergent rays, as shown by the dotted lines. This accounts for the fact that the image formed by a concave lens is erect. The plano-convex and the convex meniscus are the two single lenses used in photography. The meniscus gives the best definition, and is employed except in the cheapest class of cameras. The other forms of primary lenses are of use chiefly in forming the combinations of double lenses.

2. *Chromatic Aberration.*—Aberration means a straying from the right course. In optics, as applied to photography, it means the inability of a lens to bring to one focus all the rays of light which are transmitted through it. In passing through a lens each color is refracted at a different angle; the violet rays are bent farther away from their first course than the red rays, and will be brought to a focus nearer the lens than that of the red rays. Figure 5 shows this in an exaggerated manner. If sunlight is allowed to pass through a single lens and the image is projected on a screen, a fringe of color is seen surrounding the image, varying from violet to red according to the position of the screen. The consequence is that the lens really forms a series of images beginning with a violet image and ending with a red one, and these images are not formed at the same focus. It will be seen that there is a point where the visual rays meet, and another point where the chemical rays meet. The visible image on the ground glass of a camera is formed to a large extent by the yellow rays, and consequently is not formed at the point to produce a clear image on the sensitive plate, because that image is formed almost wholly by the blue and violet rays which come to a focus nearer the lens. Something must be done to correct this defect, called “chromatic aberration,” and bring the different rays to one focus. Two kinds of glass are now used in the manufacture of lenses. Flint glass is denser than crown glass, its dispersive power (power to decompose white light into the seven colors of the spectrum) is about twice as great, producing a spectrum nearly twice as wide as crown glass, while its refracting power is about the same. By combining a converging lens of crown



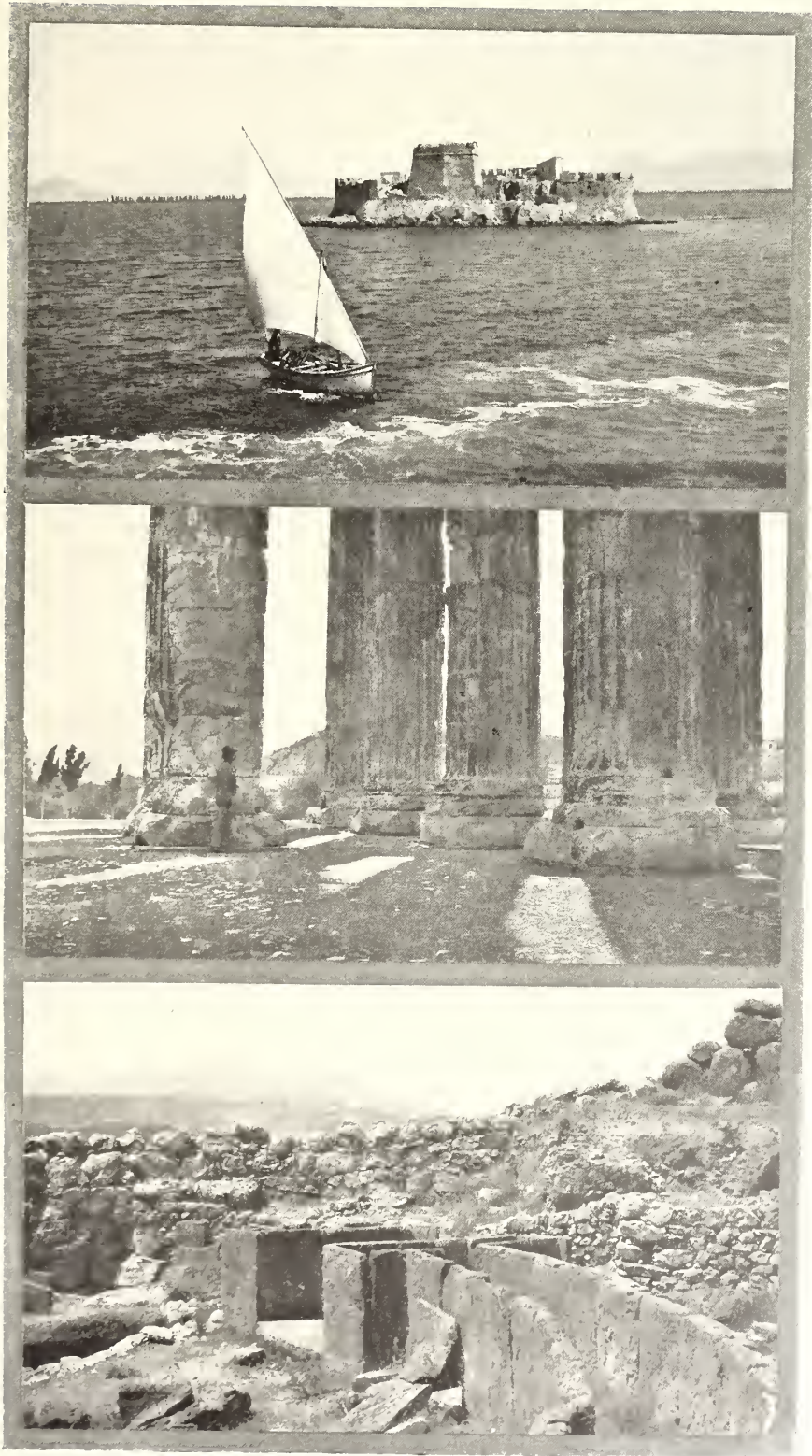
F. H. McCLURE

CARRYING WATER, DELPHI — CAVE OF APOLLO, DELOS — THE FOUNTAIN, CONSTANTINOPLE

glass with a diverging lens of flint glass, having such a shape that its dispersive power is equal to that of the converging lens, but exerted in the opposite direction, the chemical and visual rays are brought to one focus. When this is accomplished, the two lenses oppose each other in their action on the light and the aberration of one balances that of the other. Such a combination is called an achromatic lens. Achromatic lenses are usually composed of a double convex and a double concave, cemented together as shown in Figure 6.

3. *Spherical Aberration*. — When aberration is due to the form of a lens having spherical surfaces, it is called "spherical aberration." The rays of light transmitted through a convex lens form an image distinct in the center, but dim and hazy at the edges. This is caused by the fact that the lens is not of uniform thickness, and the rays which enter it at the center and those which enter at the margin are collected at different foci. Thus, in Figure 7, the ray AB is brought to a focus at C, while the ray ED is refracted to G, and hence a perfectly distinct image is not formed. It will be seen that rays of light which pass through marginal parts of the lens are refracted more strongly than the rays that fall near the center, and consequently are collected to a focus nearer than that to which the central rays are collected. Spherical aberration is generally corrected by combining converging and diverging lenses having opposite aberrations in such proportion that the aberration of one balances that of the other. It will be seen that the remedies for spherical and chromatic aberration are very similar. If a lens is fully corrected for both, so that it can be used with a large working aperture, it is called an "aplanatic lens." Spherical aberration may also be corrected in part by placing a diaphragm close to the lens to cut away or "stop" the marginal rays from being transmitted. This is called "increasing the size of the field," as it enlarges the space in which objects can be seen distinctly. The use of a stop necessarily reduces the illumination, so that the smaller the stop used, the longer will be the exposure required.

4. *Curvilinear Distortion*. — Very good landscape and figure work may be done with a single lens, but it is not at all suited for photographing buildings or anything which is bounded by straight lines at the edges of the picture. When an attempt is made to photograph a square with a single lens, it will be distorted, as shown in Figure 8, if the stop or diaphragm is in front of the lens; but if the stop is placed behind the lens, the distortion appears as in



F. H. McCLURE
IN THE HARBOR OF NAUPLIA
TEMPLE OF THE OLYMPIAN ZEUS, ATHENS
BURIAL PLACE OF THE KINGS, MYCENÆ





F. H. McCLURE

TEMPLE OF APOLLO, DELPHI—CHURCH, AND THEATER OF DIONYSOS, ATHENS

Figure 9. By combining two single lenses and placing a stop between them, as shown in Figure 10, the distortion of the lens having a stop behind it is corrected by the second lens having a stop in front of it. Such a combination is called a “doublet” or “rectilinear lens,” because it renders straight lines without distortion. The products of different makers, however, are known by various names, such as “rectilinear,” “rectigraphic,” “perigraphic,” “autographic,” and “symmetrical.” The fact that the distortion of one lens almost wholly corrects that of the other, permits the use of a stop larger than could be employed with one of the lenses used singly, so that rectilinear lenses are more rapid than single lenses.

In order to secure fair definition the single lens must be stopped down to $f. 16$, which means that the stop is one sixteenth of the focal length of the lens, while rectilinear lenses will give equally good definition with $f. 8$, and so be four times as rapid. If the worker can own but one lens of moderate cost, a rapid rectilinear will do the best general work.

5. *Curvature of Field.*—All parts of the image projected by a lens do not come to an exact focus on a plane surface, but will do so on a curved field, as shown in Figure 11. If the image is in focus on the ground glass at C, it will be sharp in the center and somewhat out of focus and indistinct about the margins. If the ground glass is moved to A, the margins will be sharp and the center out of focus. It is evident that the best method is to focus at B, a point between C and A, where the definition will be evenly distributed. This defect is almost wholly overcome by the anastigmatic lenses, made possible by the discovery of Jena glass, so that flatness of field is possible even with a large stop.

Astigmatism in a lens is its lack of power to bring vertical and horizontal lines to a focus at the same time, although they are in the same plane. This form of aberration is overcome by the use of a new and better quality of glass, known as Jena glass, which is highly refractive as well as highly dispersive. If the worker can afford it, he should own an anastigmatic lens, as it combines nearly all the advantages of the other types. The advantages are: rapidity, fineness of definition, correction of marginal and axial rays, coincidence of the visual and chemical images giving sharply defined pictures over the entire plate, and reproduction of straight lines as such. Their high degree of correction permits of shorter focal length, giving greater depth of focus, wider angle, and making the lens itself more compact.



F. H. McCLURE

SCENES IN CONSTANTINOPLE

6. *Focal Length*. — The point outside the lens where the rays of light meet and form an image of the object from which they were reflected is called the “principal focus.” The distance from the optical center of the lens to the point of focus is called the “focal length.” The focal length of a single lens may be considered approximately as the distance from the lens to the ground glass or sensitive plate when the lens has been focused on some distant object perhaps one or two hundred feet away. In doublet or rectilinear lenses the distance between the diaphragm and the ground glass, under the same conditions, will be approximately the focal length.

7. *Conjugate Foci*. — Images of objects at varying distances from the camera come to a focus at varying distances from the lens. The farther away the object is from the lens, the nearer to the lens is its image formed; while the nearer it is to the lens, the farther away is the point where the image is formed. For every distance at which an object is placed from a lens there is a corresponding distance for the formation of an image by the lens, and these relative distances are called the “conjugate foci.” The focusing scale found on folding cameras, which tells when objects beyond a certain distance are in focus without the trouble of actual focusing on the ground glass, and the tables of enlargement and reduction used by copyists are examples illustrating the useful applications of a knowledge of conjugate foci.

8. *Fixed Focus*. — In hand cameras for plates smaller than 4 x 5 inches the difference in distance between the lens and the plate when focusing near and distant objects is so small that it is hardly appreciable. It has been found that if a lens is focused on an object, for instance, 25 feet from the camera and a smaller stop used, all objects from about 10 to 50 feet will be brought into fairly sharp focus. Manufacturers have taken advantage of this fact in the construction of small cameras, and generally fix the lens permanently at a distance from the plate so that all objects beyond 6 or 10 feet away will be brought into fairly good focus. Fixed-focus cameras produce very good pictures of scenes outdoors, avoiding all fear that the view may not be in focus, but their very low price does not admit of anything more than a single lens of small working aperture, so that their usefulness is restricted to work outdoors in sunlight; exposures in dull weather with the camera held in the hand are scarcely possible.

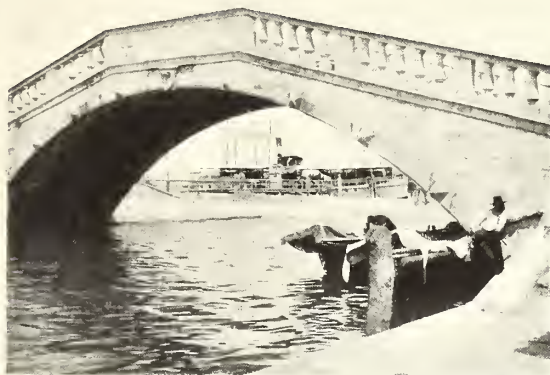
9. *Depth of Focus.* — The use of a small stop to cut away the marginal rays of light secures a greater depth of focus. The depth of focus of a lens is its power to give equally sharp images of objects at varying distances from the camera. A lens working at full opening will rarely render sharp images of both near and distant objects, but the use of a diaphragm or stop so reduces the confusion caused by the marginal rays entering the lens, that an apparent depth of focus is secured, always by sacrificing illumination, however. Of two lenses differing in focal length but of the same rapidity, the lens of shorter focal length will give the greater depth of focus, because the variation between the focal point of near and distant objects is very small. If two lenses have the same focal length but differ in rapidity, the more rapid of the two will seem to have less depth of focus; but when stopped down to the speed of the slower lens, both will be alike as regards depth of focus. It will be seen that depth of focus in different lenses of the same focal length is always the same with a certain stop and is not affected by the construction of the lens.

10. *Diaphragms, or Stops.* — Such frequent mention has been made of diaphragms or stops that some explanation is needed. A stop is a piece of blackened metal having a circular opening at its center, which is placed in front of a single lens or between the two elements of a doublet. Cheap box cameras having a single lens are fitted with one stop which is fastened permanently in front of the lens, while those of a better grade have a set of three or four stops of different sizes. Folding cameras are usually fitted with an iris diaphragm, consisting of several segments of a circle made of vulcanite or metal, and working on pivots attached to a ring in the lens mount. The circular opening formed by these segments may readily be made larger or smaller by rotating the ring, giving adjustable stops of different sizes which are marked with their focal value. Stops perform two functions. Their most important function is to improve the definition of a picture. The worker will soon discover that objects at different distances from the lens do not focus with equal sharpness, but the use of a small stop will greatly improve the definition, especially on the objects farthest from the lens. This is accomplished by cutting away the marginal rays, thus correcting aberrations and securing a greater depth of focus. The second use of stops is to regulate the amount of light passing through the lens so as to make the exposure come within the latitude of the means of making it. For this purpose the stops or diaphragms are used according to the intensity of the light, the time in which the exposure must be made, the subject to be photographed, and the style of picture to be made.

The effect of the diaphragm opening on exposure is dependent upon two principles, and these once grasped, everything about stops can be readily understood. First, the volume of light passing through a stop is proportionate to the area of the aperture. Second, the areas of circles are proportionate to the squares of their diameters.

To illustrate the first principle, suppose the area of a certain stop in a lens to be 2 square inches, it will allow twice the amount of light to pass that would be permitted by a stop whose area is only 1 square inch. It is obvious that the exposure with the smaller stop would need to be twice that with the larger, or vice versa. The second principle is as simple as the first. If the diameter of a certain stop in a lens is 2 inches, and another stop in the same lens has a diameter of 1 inch, the diameter of one would be twice that of the other. The exposures required would not be in the same ratio, however, as this is a question of diameters, not of areas. Since the volume of light that passes through a diaphragm depends upon the area and not the diameter, we must find the ratio of two circles having the diameters 1 and 2 inches. We see at once by the second principle that these numbers squared give us a ratio of 4 to 1. Thus we see that the area of the larger diaphragm is four times that of the smaller, and therefore would require only one fourth the exposure of the smaller.

11. *Diaphragm Systems.* — A few words about the diaphragm systems may not be out of place, for the beginner frequently becomes confused by the constant use of two systems whose numerical markings are partially the same, but whose actual values are identical in only one instance (f. 16=No. 16). There are two methods of marking diaphragms. The first



ORSON ARCHIBALD
 BRIDGE AT CHIOGGIA — WASHING, TIVOLI
 STREET SCENE, ASSISI
 W. H. PHILLIPS
 TEMPLE OF VESTA, ROME — TOWERS, S. GIMIGNANO
 TOMB OF HADRIAN, ROME



method employs the Uniform System numbers, introduced by the Royal Photographic Society of Great Britain, which bear the same ratio to each other as the area of the diaphragms which they designate. The second method expresses the ratio which the diameter of the opening bears to the focal length of the lens; as, f. 8, which means that the diameter of the opening is one eighth of the focal length.

$$\frac{\text{Focal length } 16}{\text{Diameter } 2} = 8, \text{ usually written f. 8.}$$

The stops in the Uniform System are numbered from one starting-point, which is f. 4, a stop whose diameter is one fourth the focal length of the lens. The area of each stop is half that of the one larger and double that of the one smaller, as shown by the numbering. The largest stop is No. 1; the second is half the area of the first, and requiring *double* the exposure is No. 2; the third is one fourth the area of the first, and requiring *four* times the exposure is No. 4. Continuing on this basis, we have the first method of numbering as follows: Nos. 1, 2, 4, 8, 16, 32, 64, 128, 256. In the second method the numbers express the proportion between the focal length of the lens and the diameter of the stop. No. 1, as has just been said, is one fourth the focal length, and is written f. 4. No. 2 must have such a diameter that its area will be one half the area of No. 1. The required diameter may be found by squaring 4=16, multiplying by 2=32, and then extracting the square root=5.6. Thus, stop No. 2 is written f. 5.6. Working out the other numbers, we have the series given in the table below, which also shows the corresponding numbers in the first method.

DIAPHRAGMS OR STOPS

f.	U. S. No.	f.	U. S. No.	f.	U. S. No.
4	= 1	11.3	= 8	32	= 64
5.6	= 2	16	= 16	45.2	= 128
8	= 4	22.6	= 32	64	= 256

Both U. S. and f. systems are in use, and mean exactly the same thing if correctly used; but the U. S. system markings are used on most of the latest cameras. This is perhaps because it is such an easy system; and as there are no decimal forms, the comparative exposures of different stops may be readily calculated.

12. *Rapidity*. — “Rapidity” is a term used to express greater or less time required by a lens to permit the light to produce a distinct image on the sensitive plate. The larger the stop used the more light is admitted through the lens and the shorter is the exposure required. On the other hand, perfect definition is secured by the use of a small stop. When a lens is so perfectly corrected that good definition is secured with a large stop, the lens is said to be rapid, if a small stop is required, the lens is slow. It will be seen that the rapidity of a lens can be conveniently expressed by a fractional number indicating the relation which the diameter of the largest stop giving a clearly defined image at the center of the plate bears to the focal length. Thus, if the largest stop has a diameter of 1 inch and the focal length of the lens is 4 inches, the rapidity is expressed as f. 4. The more rapid of two lenses of the same focal length, therefore, is the one having the larger available stop, all other conditions being equal. Portrait lenses usually work at a speed of about f. 4, rectilinear lenses at about f. 8, and some of the modern anastigmats give fine definition at f. 5.6.

13. *Covering Power*. — Covering power is the quality of a lens of defining the image sharply at the edges of the plate; and the greater this power with large stop openings, the better the quality of the lens is said to be. Most lenses cover a circle of illumination considerably larger than the dimensions of the plate used with them. This is especially important in folding cameras having rising fronts and swing-backs for photographing high buildings. If a lens just covers the plate when its axis and the center of the plate coincide, as in Figure 12, raising the lens board or tilting the camera upward has the effect of placing the center of the plate (C

in Figure 12) below the axis of the lens (A in Figure 12). The corners of the plate will be outside the circle of illumination, as shown by the dotted lines of the rectangle in the figure, and the corners of the negative will be under exposed. Should a lens of greater covering power be used so as to increase the circle of illumination, as shown by the dotted circle, equality of illumination and definition is secured over a considerable area, so that the rising front and swing-back may be freely used.

14. *Angle of View.* — Angle of view means the number of degrees included within the view. Lenses may be classified as “narrow-angle,” “medium-angle,” and “wide-angle,” according to their covering power, although “long-focus” is the term often used to indicate a narrow-angle lens, and “short-focus” a wide-angle lens. The number of degrees included in the ordinary lens is about sixty, and if eighty or more degrees are included, the lens is usually called a “wide-angle” lens. A lens is of narrow angle if its focal length is longer than the diagonal of the largest plate it will cover; a lens is of medium-angle if the focal length and the diagonal of the largest plate it will cover are about the same; while a wide-angle lens has a focal length shorter than the diagonal of the largest plate it will cover. The angle of a lens is usually wider than the view included on the plate. Since it is the focal length which determines the angle of view thrown on a plate of given size, all lenses of the same focal length will have the same angle of view on the given plate. If one wishes a wider angle on the same plate, a lens of shorter focus must be used. The curvatures of the surfaces of a short-focus lens are deeper than those of a long-focus lens, and necessitate the use of a small stop in order to have a clearly defined image. For this reason wide-angle lenses are not as rapid as other types. All lenses of the same focal length have the same angle of view on a given plate, but the angle of view varies with the size of the plate used. This may be readily seen in the following instance. If three lenses each having a focal length of 10 inches — the first a wide-angle lens capable of covering a 10 x 12 plate, the second a medium-angle lens covering an 8 x 10 plate, and the third a narrow-angle lens covering a 5 x 7 plate — were used successively in making three exposures of an object from the same point of view, the three pictures would be exactly alike. Wide-angle lenses are used for making interior views, or in taking pictures of objects which do not permit the camera to be placed at a sufficient distance from them to be included in the angle of an ordinary lens. Pictures made with them are seldom pleasing, and they should be used only in cases of necessity. Whenever it is possible, the camera should be placed at a distance about three times the height of the principal object to be photographed. This distance permits the use of medium and narrow angle lenses, which give more satisfactory and pictorial results.

DR. ERNST ABBE

WILFRED A. FRENCH A. M.

In the death of Prof. Dr. Ernst Abbe, the well-known physicist and mathematician of Jena, Germany, January 13 last, the scientific world loses a man of enduring fame. His name deserves to be enshrined with Galileo, Petzval, and others eminently and inalienably identified with the history of optics, except that Dr. Abbe's services in the interests of optical science are infinitely more significant than those of any man who has preceded him or is still living. The microscopist, the polariscopist, the photographer, are alike indebted to him for improvements of the highest importance in their respective instruments. Dr. Abbe has practically revolutionized the science of optics. He signalized his career as a scientific investigator by radical improvements in glass for various optical purposes, the practical part of this work being done by Schott, within the glass-works located at Jena. The Prussian government, realizing the importance of this newly organized industry, granted liberal subsidies, which enabled the firm of Abbe and Schott to carry out the costly experiments on a manufacturing scale. In his various ex-

periments along optical lines, Dr. Abbe availed himself of the new and remarkable properties of what are now well known as the Jena optical glasses, made exclusively by Abbe and Schott. The distinguishing characteristics of these valuable products consist in their high refractive indices, due to barium silicates and other elements used in their manufacture, enabling Dr. Abbe and, later, other mathematicians, to calculate lens systems heretofore impossible with other kinds of optical glass. In 1866 Dr. Abbe became associated with Carl Zeiss, the unrivaled maker of microscopes, and, thus enriched by precious knowledge of glass values, the new optical firm was soon enabled to equip science with a microscope of wonderfully increased power. In this connection Dr. Abbe introduced his conception of the oil-immersion feature. This he followed with an improved spectrometer and his refractrometer. To the science of photography Dr. Abbe contributed the first cemented lens systems of three and four components, from which the double anastigmat was evolved. Porro's invention of the prismatic telescope, designed to minimize the length, bulk, and weight of the ordinary Galilean terrestrial telescope, had never been practically realized, owing to the notorious deficiencies of optical glass, not the least of which was a lack of absolute transparency. None of these difficulties being present in the new optical glass, it became possible not only to construct and place on the market a perfect type of prismatic field-glass, but to produce the relief binoculars, — a practical realization of Helmholtz' conception of a stereoscopic telescope. These achievements by the Jena optical works again attest the genius of the late Dr. Abbe. In short, every optical instrument of consequence has gained immeasurably by reason of improvements either designed or suggested by him. Following in the path indicated by him, numerous other mathematicians have gained distinction by calculating lens systems very similar in principle to his first anastigmats, so indispensable to the photographer.

PHOTOGRAPHIC EXHIBITIONS AND COMPETITIONS

SOCIETY OR TITLE	DATE	ENTRIES CLOSE	INQUIRE OF
Third International Salon, Marseilles.....	Jan. 28-Feb. 12	Dec. 31	M. E. Astier, 11 rue de la Grande Armee, Marseilles, France.
Blairgowrie Photographic Society.....	Feb. 6-11	Jan. 7	W. D. M. Falconer, James St., Cottage Blairgowrie, Scotland.
Vienna Camera Club	Feb. 15-Mar. 15	Dec. 31	F. Matthies-Masuren, Halle, a. S.
Brooklyn Camera Club.....	Feb. 16-18	Feb. 4	C. M. Shipman, 776 Manhattan Ave., Brooklyn, N. Y.
Amateur P. A. of Victoria, Melbourne	Feb. 20-25	Jan. 30	F. W. Miscamble, F. I. A. V., 349 Collins St., Melbourne, Victoria.
Photographic Society of Ireland	April	.....	R. Benson, 3 Orwell Park, Rathgar, Dublin, Ireland.
International Photographic Exhibition, Genoa.....	Spring, 1905	Mar. 1, 1905	Sig. Gigi Sciutto, Piazza Fontane Marose, 18, Genoa, Italy.
Northern Photographic Exhibition.....	June	.....	F. G. Issot, 62 Compton Rd., Harehills, Leeds, Eng.
Salon and Congress of Photography, Brussels.....	July-Aug.	.....	M. Vanderkindere, Palais du Midi, Brussels, Belg.

GIVER	CLOSES	PRIZES
Burr McIntosh Monthly, New York (Outdoor Photographs).....	Monthly	\$15, \$10, \$5.
Burr McIntosh Monthly, New York (Freak Pictures).....	Monthly	\$10, \$5.
Photogram, Arundel St., Strand, London.....	Monthly	One guinea and half guinea.
The American Boy, Detroit.....	Monthly	\$2, \$1.
National Sportsman, Boston.....	Monthly	\$5, \$3, \$1, \$1.
Browning's Magazine, Boston.....	Monthly	\$5, \$3, \$2.
The Book-Lover, New York.....	Monthly	\$5, \$3, \$2, \$1.
American Amateur Photographer.....	Monthly	\$5.
Western Camera Notes, Minneapolis.....	Monthly	\$5, \$3, \$2 in goods.
Field and Stream (Sporting and Outdoor Pictures).....	Monthly	\$5, \$3, \$2, \$1.
Leslie's Weekly, New York.....	Weekly	\$10, \$5, \$1.
Buffalo Express.....	Weekly	\$5 to \$25.
New York Evening Mail.....	Weekly	\$5.
Commercial Advertiser, New York.....	Weekly	\$3, \$3, \$2, \$1.
St. Louis Star.....	Weekly	\$5.
Seattle Post Intelligencer (Western Scenes).....	Weekly	\$2.50, \$1.50.

EDITORIAL DEPARTMENT

THE CAMERA OF THE MIND

Teach thou thy brain to photograph each scene,
Each thought, each word, each act, of beauty, good, and grace,
Till thou shalt own a gallery so clean
And high, that Love shall rule thy life, and light thy face!

—LOWELL.

The idea of the poet in constituting the human mind a camera is a beautiful figure of speech which idealizes the mental process of conceiving thought. But it is something more than a mere poetical conceit or figure of speech, for the human eye has often been styled a photographic lens, through which the picture enters and is imprinted on the retina; while the optic nerve serves as a transmitter to carry the picture from the retina to the brain.

The value of this thought lies in the suggestion that the mind be reserved as a storehouse or gallery only for picture thoughts that are beautiful and true and good. By dwelling on these thoughts continually the mind will instinctively learn to grasp always what is beautiful, true, and good.

The artistic photographer who approaches portraiture successfully always views his sitter as a model in whom he seeks to give expression to some fancy of his brain. It may be joy, sorrow, grief, interest, love, or hope, but it tells others of something which his soul has created, and it can be translated to the sensitive plate just as a painter renders it permanent upon canvas, or a sculptor immortalizes it in enduring marble. So also will these habits of thought suggested by the poet help to keep before the mind right standards of beauty and truth, for "beauty is truth, and truth is beauty, and that is all there is to it."

APPRECIATION OF PICTURES

The difference between genius and talent is the difference between originality and appreciation. The power to do original work of a high order is genius, and the ability to appreciate it is talent. The divine gift of creative power, that masterly, compelling force which marshals colors and forms in pictures, words in poems, or musical notes in symphonies that all recognize as creations of the first rank, is bestowed on few mortals; but the gift of rightly seeing and appreciating excellence in the work of others, is perhaps more common and more often to be met with. To be able to dream dreams and send forth these dreams to the visible world in hues and forms of beauty is one thing, but to be able to enjoy, appreciate, and imitate them is another; and to those less gifted it is one of the compensations in life to be able to understand and feel the beauty of a picture, even though denied the gift of being able to outwardly express oneself in the same way and with the same degree of power and excellence. These thoughts are suggested by the utter hopelessness expressed by some of our readers from time to time when masterpieces of photographic art are reproduced in our pages. We offer these pictures only as standards, in the hope that some may measure up to them and others may at least enjoy them and rightly appreciate them. Next to the gift of originality, the gift of rich appreciation is the divinest of God's gifts to man. By the guiding light of genuine sympathy and intelligent admiration you can go straight to the central point in any picture which the master has wrought. You admire not so much the picture as what the artist has put into it of himself; and you realize how some one who sees better than you do has looked at something, and the loving care and ability he has shown in representing it. One of America's greatest artists, William Morris Hunt, used to urge his studio pupils to study the best pictures

over and over again if they wished to set themselves ahead. And John C. Van Dyke, one of the greatest art critics of our time, says:—

“You must look at pictures studiously, earnestly, honestly. It will take you years before you come to a full appreciation of art; but when at last you have it, you will be possessed of one of the purest, loftiest, and most ennobling pleasures that the civilized world can offer you.”

COLOR PHOTOGRAPHY

The article on “Pinachromy” which we publish in this number is somewhat technical, and some of the chemical names contained therein are of a nature to appal the uninitiated. To the man who has worked long and earnestly at a scientific investigation, the technicalities of his description are insignificant in comparison with the value of the truths which he wishes to impart, and accordingly Dr. Koenig has clothed his article in a phraseology of terrifying scientific words. Briefly, his claim is that he has found the means of making colorless collodion emulsions which may be coated on paper and printed in the light to colors complementary to the ordinary color filters of the usual three-color process, and that these colors may be practically fixed. He does not claim that his results are absolutely permanent, but as he says that his most fugitive color, blue, is more permanent than the ordinary blue-print, we may assume that the prints will be as permanent as ordinary silver prints, if not exposed to direct sunlight. Whether the process will prove as complete, simple, and practical as the author assumes, we are not prepared to say without personal investigation; but if it bears out the claims made, then color photography, in the popular sense, is near at hand.

The fact that there is probably something in this process appears to have penetrated to the sanctum of an esteemed Philadelphia contemporary of ours, who published the article in his January number. We feel that in the interests of accuracy, however, it would have proved more enlightening to his numerous readers if his proof-reader had displayed more editorial talent. We fear that the most eminent physical chemist of the world would feel little flattered at figuring in print as “Oswald.” We are also sure that he would hail as a new light in chemistry the discoverer of “triphenylmethan,” “nitro-acid-ester,” and “tuluol,” and that he would look with envy on the originator of such a term as “oxodized.” We are quite sure, though, that as he is a German, he would not appreciate the high mental qualities of him who dares to enrich the English language with such phrases as “the films . . . had been again increased considerably,” “still greater light sensitive,” “colored very strong,” “the light fastness of the pictures,” and others which we will forbear quoting. “A little knowledge is a dangerous thing,” and while it undoubtedly requires the offices of a good printer to produce a fine photographic magazine, a little efficient editing is also sometimes advisable.

THE AUTUMN SALON IN PARIS

Although it has come and gone with very little notice from the American press and none at all from the photographic journals, the Second Autumn Salon held in the Grand Palace of the Champs Elysées at Paris was one of great moment to photographers. Here, for the first time, photographs were received by the artistic jury and admitted to an exhibition of the arts on an equal footing with painting, sculpture, and engraving. The catalogue contains thirty numbers in the section devoted to photography, but this does not represent the number of works exhibited, for some of the numbers cover such entries as: 2063—Fourteen photographs; 2047—A frame containing nine photographs. The total number of exhibited works appears to be about seventy. The names of the exhibitors are of high rank, including Robert Demachy, René Le Bègue, Haweis & Coles, John Warburg, and others. Judging from the titles, some of which are familiar, from a stray criticism or two in the daily press, and from the somewhat dim recollections of an artist friend who went through the room without paying particular attention to these works, the collection would not have been counted remarkable if shown in a

photographic exhibition. But this is not the point. The photographs were passed by a jury of artists as works of art.

The fact that so little has been made of this event by those who are interested in the artistic recognition of photography, is the more remarkable when we recall the tremendous excitement caused by a similar attempt a few years ago. At that time it was announced with a great blare of trumpets that Mr. Steichen had had some photographs accepted by the Champ de Mars Salon. The world heard that photographs were henceforth to be accounted equal to paintings. Unfortunately, these much-heralded pictures were not visible when the Salon doors were opened, and it was then announced that owing to jealousies in the hanging committee, or political intrigue, or some other cause, the pictures were not hung. Self-exploitation does not seem to have been the aim of the photographers who have now succeeded in gaining the point so long and ardently worked for, and these eminent members of the Photo Club of Paris have not called the attention of the world to their well-merited triumph. We feel that their dignified attitude is well worthy of praise.

THE NEW PHOTO ERA

A correspondent, one of several, writes to offer his congratulations on the January PHOTO ERA, and incidentally asks to know the secret of our success in making such a beautiful magazine. He frankly states that he is puzzled to understand how the PHOTO ERA is able to keep up so uniformly high a standard of excellence and make it pay. Ruskin once wrote that "All works of taste must bear a price in proportion to the skill, taste, time, expense, and risk attending their invention and manufacture. Those things called dear are, when justly estimated, the cheapest: because they are attended with much less profit to the artist than those which everybody calls cheap."

We are willing to let this stand as one reply to the question of our correspondent. We make the PHOTO ERA as good as we can, and our real profit lies in the genuine satisfaction which we take from the consciousness of work well and carefully and lovingly done. We work hard because we believe that our highest dignity lies in honest, faithful labor each day; and we enjoy our work, because through it we find scope for the exercise of our best faculties. Elbert Hubbard says that "Art is the expression of a man's joy in his work." If a man is happy in producing something, his work will show it in many ways. We do our daily task in the best way we can, conscious that with honest devotion and love for it, we will get the best results. And we find our reward at last in the magazine itself and in inquiries like the above from interested readers. The question of financial success interests us as well as our correspondent, and without betraying any confidences, we may say that the PHOTO ERA is a financial as well as an artistic success.

WINTER WORK

Under this timely title has just appeared Number 10 of the *Practical Photographer*, and it is a most valuable companion to all who have courage to brave the snows and cold blasts of winter to obtain photographs. Great stress is laid in several articles on the pictorial value of winter landscapes, and practical directions are given for overcoming many of the difficulties which seem formidable to those who have not been accustomed to outdoor work at this season. The American matter includes a very interesting article by H. McB. Johnston, and the usual quantity of news notes.

The February number will treat of the making of lantern slides, and the March number will handle "Pictorial Principles of Selection, Arrangement, and Composition." Both numbers will be useful and valuable to every reader of the PHOTO ERA, and we bespeak advance orders.

THE ROUND ROBIN GUILD

Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner. Membership may be obtained by sending name and address to the PHOTO ERA.



HATTIE J. GOODNOW

FIRST PRIZE

FLASH-LIGHT PHOTOGRAPHY

WERE it not for flash-lights, the amateur would be wishing these dull winter days that Dean Swift's professor had been successful in his effort to "extract sunshine from cucumbers," and bottle it for home consumption, with a special brand for amateur photographers.

The flash-light might well be termed "bottled sunshine," so effective is it in producing a light sufficient to illumine the darkest interiors, making it possible to get as fine photographic effects as with the assistance of old Sol himself. More than all that, the flash-light may be used in places where the brilliant day-god never finds an entrance.

There are various preparations of flash-lights on the market, and these are put up to be used in four ways. First, in a tin or glass to use in a regular flash-lamp; then, in caps and powders to be used in a flash gun or pistol; in cartridges which are lighted by fuses and require no apparatus; and in small sheets which are pinned to a cardboard and ignited by touching a light to the lower corner.

There are many varieties of flash-lamps, the best in construction being those which diffuse the flash instead of keeping it concentrated in one spot. The flash-lamp is generally used with alcohol, the burner being immersed in the liquid until its packing is well saturated. The burner and tubing are attached to the lamp, the flash powder dropped in the pan, and also a little in the air chamber. The burner is then lighted and turned so that it will be over the pan containing the powder. Everything being in readiness, the operator takes his place as far away from the lamp as the length of the tubing will permit and presses the rubber bulb; the rush of air throws the powder into the flame, igniting it, and producing the flash.

The flash-gun has a very long barrel, at the end of which is a small pan on which is sprinkled the flash powder. A pressure on the trigger sends a match through the tube, which is lighted by coming in contact with the rough surface of the interior, and is forced out into the pan, where it ignites the powder.

The pistol is a small affair which may be carried



CHAS. VANDERVELDE

SECOND PRIZE

in the pocket. It is furnished with powder and caps, and the operator is protected from the powder by a disk attached to the muzzle of the pistol, which prevents the powder from scattering when ignited.

The cartridges are used by removing the cover, placing the cartridge on a piece of cardboard, — or better still, on a piece of tin, — and touching a match to the fuse. The fuse burns quickly, and the operator should protect his eyes from the flash by holding a fan or a paper before his face.

The flash-sheet is the simplest of flash-lights, and in many ways to be preferred to other methods.

In handling flash-lights, even those of simple kind, the amateur cannot exercise too much caution, as the powder is extremely inflammable, and goes off on the slightest provocation. No powder must ever be poured into the pan when the burner is lighted. Never pour the powder direct from the bottle or tin into the pan. Measure out the quantity needed on a piece of paper. Do not hold the bulb in the hand when turning the burner over the powder, as an involuntary movement of the hand will light the flash prematurely.

In making portraits by flash-lights the lighting of the face is of great importance. The proper place for igniting the flash may be determined by taking a lamp and putting it where the best effect of lights and shadows may be obtained.

The focusing of a portrait by lamplight is not as easy as by daylight, but may be done quickly by resorting to a simple device. Take a small sheet of cardboard and paste on it a word or two

printed in large black letters. Let the subject hold this piece of cardboard against the breast, turning it so that the letters will be bottom side up. They will appear right side up in the camera, and are easily distinguished. Focus on the letters.

The staring look in the eyes when a person is photographed by flash-light may be avoided by having the room well lighted. If the picture is taken in the evening, the opening of the camera will not affect the plate perceptibly, but in the daytime it is better to have the light all ready to set off before opening the shutter. The flash-light should be placed at the same height as, or even higher than, the camera, and far enough back of it so that the light will not reach the lens.

The flash-sheets, which burn about two seconds, will be found the best flash-light medium for the amateur who does very little of such work. They require no apparatus, the length of the exposure gives much better results than the instantaneous flash, and far better portrait effects may be secured by their use.

A very beautifully lighted portrait may be made by setting a screen of very thin muslin between the flash and the sitter. Two or three flash-sheets are arranged one below the other and overlapping at the corners, so that they will be ignited one after the other. The result is a very beautifully modeled portrait, with rounded shadows and no sharp high lights.

The flash-light may be used in the daytime when photographing interiors, and by arranging the flash in different ways, one can produce very

pleasing pictures. A fire in a grate may be simulated by burning a flash-sheet in it, shielding the lens so that the flash does not strike the plate. A small piece of a flash-sheet burned under a lamp with a large shade gives the impression of the lamp furnishing the light. A very interesting picture was recently produced in this way. The camera was focused on a subject seated by a table reading by the light of a lamp. A piece of flash-sheet was fastened under the lamp shade, and ignited by means of a gas taper, the light being just bright enough to throw a strong light on book and reader, leaving the surroundings in soft shadows.

The flash-light has given us some very interesting pictures of life underground in mines, caves, etc. A country cellar well stored with winter fruits and vegetables affords excellent facilities for a picturesque photograph. The subjects introduced might be the grandfather and his favorite grandson selecting the choicest apples from the bin for the evening's refreshment, or drawing the old blue pitcher full of cider. Of course in such a picture the lights and shadows must be very strong, as a cellar is not supposed to be lighted, and one thing which the amateur should not forget is the candle in an old iron candlestick held by the youngster. The candle gives the proper touch to the picture.

There is much more to be said about the making of flash-lights, but the amateur having followed the simple directions here given, will extend his knowledge much more rapidly by actual experiments than by reading volumes on the subject.

GREEN SENSITIVE PAPER

With carbon and bichromate of potash printing the printer may obtain almost any tone desired. The carbon papers are expensive, and the bichromate method requires skill and taste in mixing the colors. The amateur who, from lack of time or of money, does not care to experiment with either of these processes, may adopt a cheaper and easier method and produce very pleasing printing paper.

Any good paper of heavy weight may be used, or one may buy the smooth paper used for photographic work. The size of the sheet to be sensitized depends altogether on the use to which the print is to be put. If it is to be included in a collection of prints, the sheet should be of heavy paper, and it should be cut a little larger than the book. If it is to be mounted, then it should be cut the size of the negative, which will of course allow for trimming.

Green-tinted paper is specially good for printing pictures of leaves, ferns, trailing vines, and negatives of like subjects. These prints make a pleasing addition to a book of landscape pictures.

Green tones on sensitive paper may be obtained as follows:—

Make up a solution of 12 grains of nitrate of

uranium to 1 oz. of water. From 8 to 16 oz. will be enough to sensitize a quantity of paper. Mark the sheet lightly with a pencil on the side which is not to be sensitized, and float the sheets, one at a time, face down on the solution. A large porcelain tray will be found the best tray for floating the prints, as it does not affect the solution or soil the paper. Let the sheets float for five minutes, drain, and dry in a dark room as quickly as possible.

Three more solutions are necessary for the finishing of the print. Solution No. 1 is made of 10 grains of red prussiate of potash to each ounce of water. Solution No. 2 is a ten per cent solution of nitrate of cobalt. Solution No. 3 is made of 8 oz. of water, 160 grains of sulphate of iron, and 1 dram of sulphuric acid.

To print, expose to strong sunlight ten minutes for a negative of ordinary printing quality, and three minutes for a thin negative. As soon as a print is made, it is developed and fixed. Place the print face up in a tray of hot water, about 120° Fahr. Let it remain for thirty seconds, drain off the water and flood with the red prussiate solution. As soon as the print has developed far enough, wash until the high lights are clear, then place in the nitrate of cobalt solution. Leave it in this bath one minute, drain, and dry by artificial heat as quickly as possible. The more rapidly the print is dried, the more brilliant will be the tone of the print. As soon as the print is dry, place it in the fixing bath of sulphate of iron, etc., for two minutes, then wash and dry.

In preparing the solutions and in using them for the print, handle with rubber finger tips. Sulphuric acid is a dangerous chemical, and too much care cannot be taken in using it.

It is a wise plan to mark on each bottle the formula of the solution and the use to which it is to be put. Mark all bottles containing injurious chemicals "Poison." It is not at all a bad plan to mark all photographic solutions thus; for while some are harmless, many are deadly poisons.

The tone of the print may be varied by a longer or shorter printing, and by after treatment in the development.

In preparing any sensitive paper it is important that all dishes and utensils used should be perfectly clean.

ANSWERS TO CORRESPONDENTS

FREDERICK H. — To retouch blue-prints, use moist water-color, either ultramarine or French blue. Sometimes Prussian blue will be found to exactly match the color of the print. To retouch without showing brush marks, moisten the print, lay it on a sheet of glass and take off all surplus moisture with a clean blotter. Use a medium sable brush. The dampness of the paper lets the color sink into the paper and the retouching is hardly noticeable.



JOHN M. WILLIAMS

FOURTH PRIZE

EMMA H. G. — A retouching fluid may be made after the following formula: $\frac{1}{2}$ oz. of sandarac gum, 3 oz. of alcohol, and 40 grains of castor oil. Dissolve the sandarac in the alcohol, and then add the oil. Always shake the solution well before using. To use, take a piece of surgeon's cotton, slightly moisten it with the varnish, and rub lightly over the portions of the negative to be retouched. Very little solution is required, and it must be applied very thinly, otherwise the edges will be visible in the printing. If a negative does not require much retouching, a little finely powdered pumice-stone rubbed with the finger over the places to be treated will give sufficient tooth to allow the pencil to work smoothly.

BEN. MARSH. — You can improvise developing and hypo trays by taking a square pasteboard box and lining it with carriage leather or oil cloth such as is used for shelves, tables, etc. Fold the cloth at the corners and tack it in place with a few stitches. Old plate boxes may be used for this purpose. Of course if the boxes are set in water they will warp and get out of shape, so in using set them on a dry board or several folds of newspaper spread over the developing table.

D. A. W. — You can make a pretty good print from a thin negative by placing the printing frame at the bottom of a wooden box, and setting the box in the shade, letting it remain there until printed. A sheet of ground glass put over the frame and the printing done in the shade also helps to produce a good print.

V. F. SWEET. — The transparent spots on your negatives are doubtless caused by air-bubbles forming on the film when the plate is put into the developer. The bubbles prevent the developer from acting on the parts of the film which they cover,

hence development is begun and finished on the other parts of the plate, while the spots under the air-bubbles do not have as long a development, hence they will always print more quickly, and appear as dark spots on the print. The easiest way to avoid air-bubbles is to lay the plate in a tray and flood it with developer from the graduate. Rock the tray as soon as the developer is poured over the plate, so that all parts will be wet at once.

T. W. — Your films, which you say are badly stained by improper fixing, may be benefited by first soaking them in clear water till perfectly wet, then placing them in a solution made of 1 oz. of alum, 1 oz. of citric acid, 3 oz. of sulphate of iron crystals, and a pint of water. Leave them in the solution till the stains have been removed, then wash well and dry.

SARAH C. — Gold is always used in solution. Buy a 15 grain bottle of gold chloride, dissolve it in $7\frac{1}{2}$ oz. of water, which would be 1 grain of gold chloride to each $\frac{1}{2}$ oz. of water. Mark the bottle "Stock Gold Solution," and when making up a formula which calls for a grain of gold, take $\frac{1}{2}$ oz. of the solution and $\frac{1}{2}$ oz. less of the water called for. This will give the proper proportion of gold to the bath.

BURT FENTON. — To blacken your brass diaphragms, first scour them well, then place in a solution made of equal parts of copper nitrate and silver nitrate of a strength of forty per cent. Let them soak for ten or fifteen minutes, then place in a hot oven till well blackened.

THEODORE S. — The use of the muriatic acid in platinum prints is to bleach out the whites of the print. The unused salts, if not removed from the print, will in time discolor it. Use



HARRY D. WILLIAR

THIRD PRIZE

three acid baths, the strength being 1 oz. of acid to 60 of water for black and white, and half that strength for sepia prints.

A. B. L. — To clean a lens, breathe on the surface and polish lightly with a clean chamois or an old silk handkerchief. Do not rub the lens, but touch it lightly. Never use soap and water, as you would be apt to injure your lens very materially. If the inside surfaces of the lenses are dusty, it would be a wise plan to take them to a skilled optician and let him clean them.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITION

SUBJECT for the February Competition, "Snow Scenes." Closes March 31.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: \$5.00 in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

AWARDS

The awards in the "Harvest Scenes" competition are as follows, and the four prize-winning pictures are published in this number. First, Hattie J. Goodnow, "The Hayfield"; second, Charles Vandervelde, "October Afternoon"; third, Harry D. Williar, "In the Autumn Sun"; fourth, John M. Williams, "Hay Harvest." Honorable mention was given to R. I. Caughey, "As in Younger Days"; H. P. Dahlen, "The Harvesters"; Will H. Arnold, "Getting Ready for the Husking"; Elijah N. Axon, "The Nine Acre Squash Field."

SUBJECTS FOR COMPETITIONS

January.—"Interiors." Closes February 28.

February.—"Snow Scenes." Closes March 31.

March.—"Still Life." Closes April 30.

April.—"Cloud Study." Closes May 31.

May.—"Animal Study." Closes June 30.

June.—"A Country Road." Closes July 31.

Special Competition.—"Old Acquaintances." From five to ten character studies, preferably illustrating the inhabitants of "Our Village," mounted on a folder which closes like a book. Closes March 31, 1905. Prizes \$10.00 and \$5.00, awarded only to satisfactory collections. An article suggesting treatment of subject will be found in the October, 1904, number of the PHOTO ERA.

SPECIAL COMPETITION — "OUR VILLAGE"

Only one entry was received in this competition, and it will be extended for another quarter, closing March 31. We trust that we will receive more entries and reprint the original conditions.

This competition must comprise a series of not less than five nor more than ten pictures of some village. The prints must be arranged in order and mounted in a folding booklet, which may be stretched out to show all the pictures at once. Each picture must have a title and a few words of description. The object of this competition is to interest our members in taking up now and then special subjects which require a number of illustrations to complete. It will be found far more delightful than the taking of pictures in a haphazard manner,—here a picture, there a picture. If no pictures are received which are considered worthy of a prize, none will be given. In the August, 1904, number of the PHOTO ERA will be found an article on village pictures, containing hints on choice of subjects, etc.

First prize: \$10.00 in cash.

Second prize: \$5.00 in cash.

THE PHOTO ERA EUROPEAN TOURS, 1905

THE results of the PHOTO ERA Trip to Europe last summer were so satisfactory to all concerned, that we announce with great pleasure that we are able to offer a series of tours this summer. We shall enlist the services as leaders of two experienced photographers who are well acquainted with travel and life in Europe. Their itineraries will be so arranged as to come into contact at the maximum practicable number of points, giving the greatest possible variety of routes.

The two leaders selected are Frank R. Fraprie and Wilfred A. French, both associate editors of this magazine. Their routes will be nearly the same in the early part of the tours, although they do not travel together at all times. This early portion includes Flanders, the Rhine, and Switzerland. After landing at Antwerp and viewing this interesting commercial city, Ghent will be visited. While this is of great historic and pictorial interest, it is surpassed by Bruges, the next town on our route. After spending a day in Brussels, we shall have another picturesque town in Louvain. Sunday will be spent at Cologne, and then two days devoted to the trip up the Rhine, stopping at the most picturesque points, as Bonn, Königswinter, Coblenz, Bingen, etc. We will then pass a day in Heidelberg, with its famous university and castle. The next stop is Lucerne, and thence we go on to Interlaken. Here we will meet any of our party who may have preferred to see Paris rather than the Rhine. Any such members may go from Antwerp direct to Paris, and then to Interlaken, as outlined at the beginning of Tour C. Those whose interest is mainly photographic will find the Rhine trip far more interesting, although Paris offers treasures of art and civilization which are of great interest.

Going from Interlaken, the reunited party will spend a day in the wonderful Bernese Oberland, traveling to the foot of the majestic Jungfrau and back through the Lauterbrunnenthal to Interlaken and then on to Berne, a truly Swiss city, where we shall spend our second Sunday. The next day brings us to Lake Geneva, with the Castle of Chillon and Territet, and on the next we shall drive over the Simplon Pass into Italy. Then follow two days of pure delight for the photographer on the three Italian lakes, Maggiore, Lugano, and Como. The scenic attractions which have been given them by nature have been much increased by the loving toil of man, and their shores are a delight to the senses. Two days at Milan will give us ample opportunity to inspect its artistic treasures, and then we shall spend four days in Venice and on its lagoons. Here an inexhaustible series of pictures lies before us, especially on our trip to Chioggia, the unspoiled town at the southern end of the lagoon. Our next stop on the way south is at Ravenna,

with its unique buildings and picturesque situation. Returning to Bologna, our party divides for the last time, part going north with Mr. French and the rest south to Florence, the city of art. Its wonderful collections and medieval monuments will give us ample field for study during our four days, and then we will go on to Assisi, home of St. Francis, and the town where last summer we took the most pictures, and to Perugia, its old-time rival, also perched on a precipitous hill. A day in each will be succeeded by one in Orvieto, the finest, perhaps, of all the hill towns, and then we go on to Rome. Our week here will be pleasantly diversified by several excursions into the Alban Hills in search of the picturesque. Of the glories of Rome there is no need to speak. One could spend months there, but we must still go forward, and our last week will be spent about the bay of Naples, visiting Capri, Sorrento, Amalfi, Salerno, and Pompeii. Those who take Tour A, our shortest option, will sail from Naples on August 11, spend some time at Gibraltar and the Azores, and reach New York on August 23.

Those who have elected Tour B, will board the good steamer "Pelops" at Naples, and land at Palermo, where three days will be spent in viewing this wonderful city and the great Norman cathedrals at Monreale and Cefalu. Another day will be devoted to the Greek temples at Selinunto and Girgenti, the most important Greek remains outside of Greece itself. The next day brings us to Syracuse, one of the most interesting places in our whole itinerary last year. From here we may either return to Naples and America by way of Taormina, as in Tour B, or go on for longer or shorter Greek tours, as outlined in Tours C and D. Still further options not included in our published list allow the traveler to proceed to Smyrna and Constantinople, or even to Palestine and Egypt. Full information about these extensions will be furnished on request.

To return to Mr. French's party, which we left at Bologna. This party will proceed to Milan, and after spending two days there, go through the St. Gothard tunnel and over the Furka Pass by carriage to Brigue. Spending a day at the Tête Noire, the next stop is Chamonix, at the foot of Mont Blanc. Here the better part of three days will be none too long a stop. Visiting in succession the important cities of Geneva, Turin, and Genoa, this party reaches its ultimate southern point at Pisa. Here for the last time is an opportunity of changing leaders, for the parties are not far apart. Mr. French's return covers some of the most picturesque country in Europe, and some of the most important historical places. He skirts the whole Riviera, Italian and French,

(Continued on page 76)

THE PHOTO ERA EUROPEAN TOURS, 1905

Sundays in Italics.	Tour A. 67 Days, \$535.	Tour B. 74 Days, \$590.	Tour C. 85 Days, \$680.	Tour D. 85 Days, \$680.	Tour E. 81 Days, \$645.	Tour F. 87 Days, \$690.
June 17	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....
June 27	Antwerp.....	Antwerp.....	Paris.....	Paris.....	Antwerp.....	Antwerp.....
June 28	Ghent.....	Ghent.....	Paris.....	Paris.....	Ghent.....	Ghent.....
June 29	Bruges.....	Bruges.....	Paris.....	Paris.....	Bruges.....	Bruges.....
June 30	Brussels.....	Brussels.....	Paris.....	Paris.....	Brussels.....	Brussels.....
July 1	Louvain.....	Louvain.....	Paris.....	Paris.....	Louvain.....	Louvain.....
July 2	Cologne.....	Cologne.....	Paris.....	Paris.....	Cologne.....	Cologne.....
July 3	The Rhine.....	The Rhine.....	Paris.....	Paris.....	The Rhine.....	The Rhine.....
July 4	The Rhine.....	The Rhine.....	Paris.....	Paris.....	The Rhine.....	The Rhine.....
July 5	Heidelberg.....	Heidelberg.....	Paris.....	Paris.....	Heidelberg.....	Heidelberg.....
July 6	Lucerne.....	Lucerne.....	To Lucerne.....	To Lucerne.....	Lucerne.....	Lucerne.....
July 7	Interlaken.....	Interlaken.....	Lucerne, Interlaken.....	Lucerne, Interlaken.....	Interlaken.....	Interlaken.....
July 8	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....
July 9	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....
July 10	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....
July 11	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....
July 12	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....
July 13	Lake Como.....	Lake Como.....	Lake Como.....	Lake Como.....	Lake Como.....	Lake Como.....
July 14	Milan.....	Milan.....	Milan.....	Milan.....	Milan.....	Milan.....
July 15	Milan.....	Milan.....	Milan.....	Milan.....	Milan.....	Milan.....
July 16	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 17	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 18	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 19	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....
July 20	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....
July 21	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....
July 22	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....
July 23	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....
July 24	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....
July 25	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....	Florence.....
July 26	Assisi.....	Assisi.....	Assisi.....	Assisi.....	Assisi.....	Assisi.....
July 27	Perugia.....	Perugia.....	Perugia.....	Perugia.....	Perugia.....	Perugia.....
July 28	Orvieto.....	Orvieto.....	Orvieto.....	Orvieto.....	Orvieto.....	Orvieto.....
July 29	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....
July 30	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....
July 31	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....
Aug. 1	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....
Aug. 2	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....	Rome.....
Aug. 3	Tivoli.....	Tivoli.....	Tivoli.....	Tivoli.....	Pisa.....	Pisa.....
Aug. 4	Albano, Nemi.....	Albano, Nemi.....	Albano, Nemi.....	Albano, Nemi.....	The Eastern Riviera.....	The Eastern Riviera.....
Aug. 5	To Naples and Capri.....	To Naples and Capri.....	Rome.....	To Capri.....	The Western Riviera.....	The Western Riviera.....
Aug. 6	Capri.....	Capri.....	Anzio.....	Capri.....	Monaco, Monte Carlo.....	Monaco, Monte Carlo.....
Aug. 7	Sorrento.....	Sorrento.....	Pompeii, Capri.....	Sorrento.....	The Corniche Drive.....	The Corniche Drive.....
Aug. 8	Amalfi, Salerno.....	Amalfi, Salerno.....	Taormina.....	Amalfi, Salerno.....	Marseilles.....	Marseilles.....
Aug. 9	Pompeii.....	Pompeii.....	En route to.....	Pompeii.....	Arles, Nîmes.....	Arles, Nîmes.....
Aug. 10	Naples.....	Naples.....	Olympia.....	Naples.....	Pont du Gard.....	Pont du Gard.....
Aug. 11	Naples (sail).....	Naples.....	Delphi.....	Naples.....	Carcassonne.....	Carcassonne.....
Aug. 12	Due in N. Y. Aug. 23.....	Palermo, Monreale.....	Corinth.....	Palermo, Monreale.....	Lourdes.....	Lourdes.....
Aug. 13	.....	Palermo.....	Athens.....	Palermo.....	Gavarnie.....	Gavarnie.....
Aug. 14	.....	Palermo, Cefalu.....	Athens.....	Palermo Cefalu.....	Pau.....	Pau.....
Aug. 15	.....	Selinunto, Girgenti.....	Athens.....	Selinunto, Girgenti.....	Angoulême.....	Angoulême.....
Aug. 16	.....	Syracuse.....	Athens.....	Syracuse.....	Tours.....	Tours.....
Aug. 17	.....	Taormina.....	Athens.....	En route to.....	Loches.....	Loches.....
Aug. 18	.....	Naples (sail).....	Athens.....	Olympia.....	Amboise, Blois.....	Amboise, Blois.....
Aug. 19	.....	Due in N. Y. Aug. 30.....	Athens.....	Delphi.....	Chartres.....	Chartres.....
Aug. 20	.....	.....	Athens.....	Athens.....	Paris.....	Paris.....
Aug. 21	.....	.....	Epidaurus.....	Athens.....	Paris.....	Paris.....
Aug. 22	.....	.....	Mycenae, Tiryns.....	Athens.....	Paris.....	Paris.....
Aug. 23	.....	.....	Cnossus in Crete.....	Athens.....	Paris.....	Paris.....
Aug. 24	.....	.....	Patmos, Samos.....	Athens.....	Paris.....	Paris.....
Aug. 25	.....	.....	Delos, Andros.....	Athens.....	Rouen.....	Rouen.....
Aug. 26	.....	.....	Salamis, Eleusis.....	Athens.....	Caen.....	Caen.....
Aug. 27	.....	.....	Corfu.....	Corfu.....	Cherbourg (sail).....	London.....
Aug. 28	.....	.....	Brindisi.....	Brindisi.....	Due in N. Y. Sept. 6.....	London.....
Aug. 29	.....	.....	Naples (sail).....	Naples (sail).....	.....	London.....
Aug. 30	.....	.....	Due in N. Y. Sept. 10.....	Due in N. Y. Sept. 10.....	.....	London.....
Aug. 31	.....	.....	.....	.....	.....	London.....
Sept. 1	.....	.....	.....	.....	.....	London.....
Sept. 2	.....	.....	.....	.....	.....	Due in N. Y. Sept. 12.....

Sundays in Italics.	Tour G. 94 Days, \$750.	Tour H. 94 Days, \$750.	Tour I. 81 Days, \$645.	Tour J. 87 Days, \$690.	Tour K. 85 Days, \$680.	Tour L. 74 Days, \$590.
June 17	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....
June 27	Antwerp.....	Antwerp.....	Antwerp.....	Antwerp.....	Antwerp.....	Antwerp.....
June 28	Ghent.....	Ghent.....	Ghent.....	Ghent.....	Ghent.....	Ghent.....
June 29	Bruges.....	Bruges.....	Bruges.....	Bruges.....	Bruges.....	Bruges.....
June 30	Brussels.....	Brussels.....	Brussels.....	Brussels.....	Brussels.....	Brussels.....
July 1	Louvain.....	Louvain.....	Louvain.....	Louvain.....	Louvain.....	Louvain.....
July 2	Cologne.....	Cologne.....	Cologne.....	Cologne.....	Cologne.....	Cologne.....
July 3	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....
July 4	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....	The Rhine.....
July 5	Heidelberg.....	Heidelberg.....	Heidelberg.....	Heidelberg.....	Heidelberg.....	Heidelberg.....
July 6	Lucerne.....	Lucerne.....	Lucerne.....	Lucerne.....	Lucerne.....	Lucerne.....
July 7	Interlaken.....	Interlaken.....	Interlaken.....	Interlaken.....	Interlaken.....	Interlaken.....
July 8	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....
July 9	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....
July 10	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....
July 11	Simplon Pass.....	Simplon Pass.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....
July 12	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....
July 13	Lake Como.....	Lake Como.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....
July 14	Milan.....	Milan.....	Lake Como.....	Lake Como.....	Lake Como.....	Lake Como.....
July 15	Milan.....	Milan.....	Bergamo.....	Bergamo.....	Bergamo.....	Bergamo.....
July 16	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 17	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 18	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 19	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....
July 20	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....
July 21	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....
July 22	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....	Milan.....
July 23	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....	Milan.....
July 24	Florence.....	Florence.....	St. Gothard Pass.....	St. Gothard Pass.....	St. Gothard Pass.....	St. Gothard Pass.....
July 25	Florence.....	Florence.....	Furka Pass.....	Furka Pass.....	Furka Pass.....	Furka Pass.....
July 26	Assisi.....	Assisi.....	Tête Noire.....	Tête Noire.....	Tête Noire.....	Tête Noire.....
July 27	Perugia.....	Perugia.....	To Chamonix.....	To Chamonix.....	To Chamonix.....	To Chamonix.....
July 28	Orvieto.....	Orvieto.....	Chamonix.....	Chamonix.....	Chamonix.....	Chamonix.....
July 29	Rome.....	Rome.....	Chamonix.....	Chamonix.....	Chamonix.....	Chamonix.....
July 30	Rome.....	Rome.....	Geneva.....	Geneva.....	Geneva.....	Geneva.....
July 31	Rome.....	Rome.....	To Turin.....	To Turin.....	To Turin.....	To Turin.....
Aug. 1	Rome.....	Rome.....	Turin.....	Turin.....	Turin.....	Turin.....
Aug. 2	Rome.....	Rome.....	Genoa.....	Genoa.....	Genoa.....	Genoa.....
Aug. 3	Tivoli.....	Tivoli.....	Pisa.....	Pisa.....	Pisa.....	Pisa.....
Aug. 4	Albano, Nemi.....	Albano, Nemi.....	The Eastern Riviera.....	The Eastern Riviera.....	Rome.....	Rome.....
Aug. 5	Rome.....	Rome.....	The Western Riviera.....	The Western Riviera.....	Rome.....	To Capri, Capri.....
Aug. 6	Rome.....	Rome.....	Monaco, Monte Carlo.....	Monaco, Monte Carlo.....	Anzio.....	Sorrento.....
Aug. 7	Pompeii, Capri.....	Pompeii, Capri.....	The Corniche Drive.....	The Corniche Drive.....	Pompeii, Capri.....	Amalfi Salerno.....
Aug. 8	Naples.....	Naples.....	Marseilles.....	Marseilles.....	Taormina.....	Pompeii.....
Aug. 9	To Florence.....	To Florence.....	Arles, Nîmes.....	Arles, Nîmes.....	En route to.....	Naples.....
Aug. 10	To Milan.....	To Trent.....	Pont du Gard.....	Pont du Gard.....	Olympia.....	Naples.....
Aug. 11	St. Gothard, Lucerne.....	To Munich.....	Carcassonne.....	Carcassonne.....	Delphi.....	Palermo, Monreale.....
Aug. 12	To London.....	Munich.....	Lourdes.....	Lourdes.....	Palermo.....	Palermo.....
Aug. 13	London.....	Munich.....	Gavarnie.....	Gavarnie.....	Athens.....	Palermo, Cefalu.....
Aug. 14	Oxford.....	To Vienna.....	Pau.....	Pau.....	Athens.....	Selinunto, Girgenti.....
Aug. 15	Stratford-on-Avon.....	Vienna.....	Angoulême.....	Angoulême.....	Athens.....	Syracuse.....
Aug. 16	Warwick, Kenilworth.....	Vienna.....	Tours.....	Tours.....	Athens.....	Taormina.....
Aug. 17	Chester.....	Vienna.....	Loches.....	Loches.....	Athens.....	Naples (sail).....
Aug. 18	Grasmere.....	Vienna.....	Amboise, Blois.....	Amboise, Blois.....	Athens.....	Due in N. Y. Aug. 30.....
Aug. 19	Keswick, Melrose.....	To Dresden.....	Chartres.....	Chartres.....	Athens.....	.....
Aug. 20	Edinburgh.....	Dresden.....	Paris.....	Paris.....	Athens.....	.....
Aug. 21	Edinburgh.....	Dresden.....	Paris.....	Paris.....	Epidaurus.....	.....
Aug. 22	Trossachs and Lakes.....	Dresden.....	Paris.....	Paris.....	Mycenae, Tiryns.....	.....
Aug. 23	Durham.....	Dresden.....	Paris.....	Paris.....	Cnossus.....	.....
Aug. 24	York.....	Berlin.....	Paris.....	Paris.....	Patmos, Samos.....	.....
Aug. 25	Lincoln, Ely.....	Berlin.....	Rouen.....	Rouen.....	Delos, Andros.....	.....
Aug. 26	Cambridge, London.....	Berlin.....	Caen.....	Caen.....	Salamis, Eleusis.....	.....
Aug. 27	London.....	Berlin.....	Cherbourg (sail).....	London.....	Corfu.....	.....
Aug. 28	London.....	Berlin.....	Due in N. Y. Sept. 6.....	London.....	Brindisi.....	.....
Aug. 29	London.....	To Amsterdam.....	.....	London.....	Naples (sail).....	.....
Aug. 30	London.....	Amsterdam.....	.....	London.....	Due in N. Y. Sept. 10.....	.....
Aug. 31	London.....	The Hague.....	.....	London.....	.....	.....
Sept. 1	London.....	Paris.....	.....	London.....	.....	.....
Sept. 2	London.....	Paris.....	.....	London.....	.....	.....
Sept. 3	Paris.....	Paris.....	.....	Due in N. Y. Sept. 12.....	.....	.....
Sept. 4	Paris.....	Paris.....	.....	.....	.....	.....
Sept. 5	Paris.....	Paris.....	.....	.....	.....	.....
Sept. 6	Paris.....	Paris.....	.....	.....	.....	.....
Sept. 7	Paris.....	Paris.....	.....	.....	.....	.....
Sept. 8	Paris.....	Paris.....	.....	.....	.....	.....
Sept. 9	Antwerp (sail).....	Antwerp (sail).....	.....	.....	.....	.....
.....	Due in N. Y. Sept. 19.....	Due in N. Y. Sept. 19.....	.....	.....	.....	.....

spending Sunday at Monte Carlo, taking the Corniche Drive on Monday, and then going on to Marseilles. From here his trip includes practically all that is worth seeing in southern and western France, the published itinerary outlining this under Tour I. After five days of Paris, the members of this party may either sail from Cherbourg for New York, or cross the channel for a week of London.

Through our connection with the Bureau of University Travel we are able to arrange almost any change of itinerary desired. We shall be pleased to hear from any of our readers who wish to travel in any part of Europe this spring or summer, and shall probably be able to meet any requirement in the way of route. We shall be glad to give information upon any phase of travel in Europe.

Our prices for the trips are inclusive. They are designed to cover every calculable expense, and hence form almost the entire cost of the trip. They include three meals a day, and all tips and fees of every kind, those on Atlantic steamers

included. The hotels everywhere are first class, and the railroad travel is second class in compartments usually specially reserved for us. We aim to have our travel as comfortable as possible, but at reasonable expense; hence we do not travel first class, which possesses no advantages in comfort, and only a fancied one in exclusiveness. As we usually fill our compartments, we secure this by our own numbers.

We cannot here outline the manifold arrangements which we have made for the comfort and pleasure of those who will go with us. Some of them will be told in future numbers of the PHOTO ERA, some must be left to be experienced as pleasant surprises in actual occurrence. We solicit questions on any detail of European travel. We shall be glad to answer all out of the wide experience of our own leaders and associates, which stands at our readers' disposal. If you have any thoughts of going to Europe this summer or later, let us know what you want to do, and we will try to help you to the best of our ability.

NOTES AND NEWS

THE midwinter dinner of the N. E. Photographers' Association in honor of the Executive Board of the Photographers' Association of America took place on Thursday, January 19, at the Quincy House, Boston. It was the largest gathering of the New England Association ever held in its history. The spirit of good fellowship and the enthusiasm that prevailed augurs well for the success of the approaching national convention to be held here next August. Chris Johnston of Hartford, the newly elected president of the N. E. Association, presided gracefully, introducing Mr. Samuel Holman of Attleboro, the treasurer, as toastmaster. His witty introductions of the various speakers helped along the jollity of the occasion very much. The principal speeches of the evening were made by Geo. G. Holloway, president of the National Association; C. J. Van Deventer of Decatur, Ill., and A. T. Proctor of Huntington, W. Va., vice-presidents; J. M. Bandtel of Milwaukee, Wis., secretary; and Frank R. Barrows of Boston, treasurer. The impression created by the executive board was most favorable, and the promises of support for the national convention in Boston next August were very encouraging. Among the prominent out-of-town guests present besides the national officers, were John Tennant, editor of *Photo Miniature*; W. I. Scandlin, the advertising expert; Milton Waide, Ben Pellgrif, H. C. Collings, and Tom Pattison. A novel feature of the banquet was the presence at each plate of a miniature graduate and a pint bottle of claret, labeled "Joe's Cold Developer," while the menu cards were printed on Di Nunzio platinum paper.

Short speeches were made by Messrs. Tingley, Hearn, Parkinson, Bushong, Schervee, Merrill, Campton, and Geo. Hastings, a former president of the National Association. The party broke up at a late hour, pledging loyal support to the Convention of 1905.

HERR FRANZ GOERKE announces that an international exposition of artistic photography will take place from April 7 to May 8, 1905, at the Royal Academy of Fine Arts, 120 Potsdamerstrasse, Berlin. For all information address Herr Franz Goerke, 32 Maasenstr., Berlin, W. 62, Germany.

THE tenth international salon of photography, organized by the Photo Club of Paris, will occur from May 9 to June 19, 1905, at the Palace of Fine Arts of the city of Paris (Petit-Palais, Champs-Élysées). Entries must reach the secretary before March 1, and the pictures to go before the jury must reach, before April 10 at the latest, the Photo Club de Paris, 45, rue des Mathurins, Paris.

Concurrently with this exposition, the same club will hold an international exposition of photographic postal cards. Copies of the rules will be sent on application to the secretary of the club at the above address.

THE annual exhibition of the Rochester, N. Y., Camera Club was held from January 25 to 28 at Wilder's Arcade in that city. A very interesting collection of 159 pictures was on view. The catalogue was daintily gotten up, and adorned with an Argo print on the cover.

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Contributions relating to photography in any and all of its branches will receive our careful consideration. While not accepting responsibility for unsolicited contributions, we will endeavor to return them if not available, provided return postage is enclosed.

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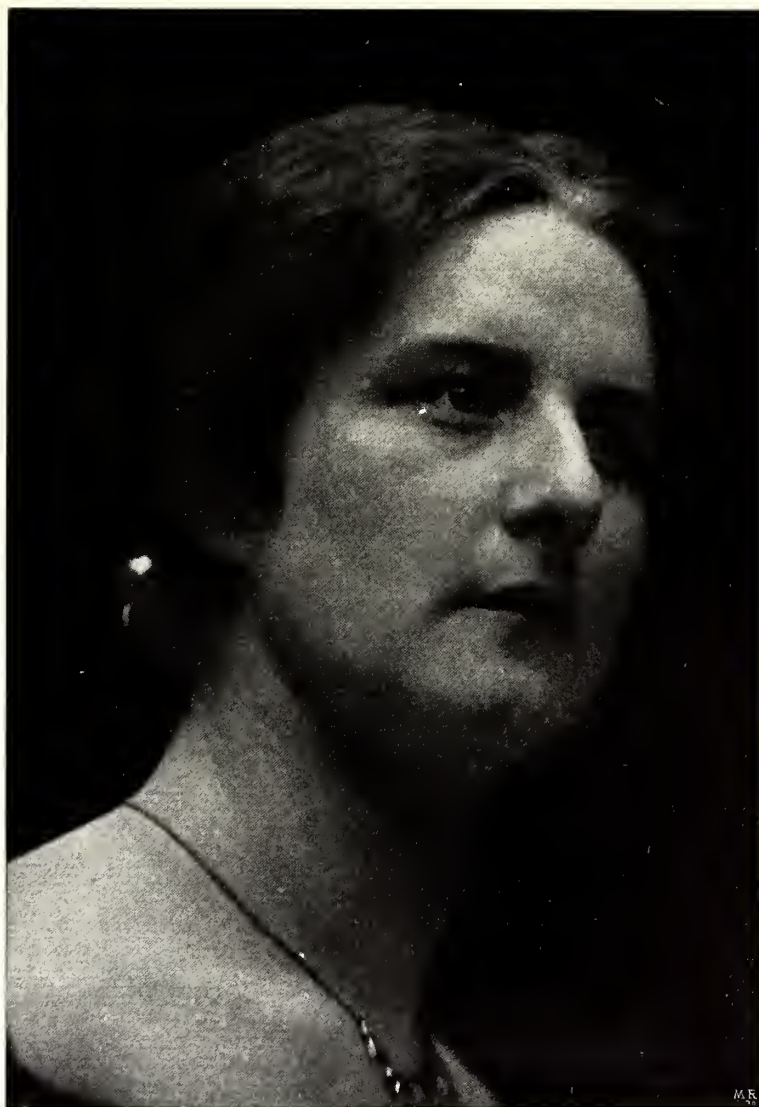
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W. WEIMAR, DARMSTADT
A PORTRAIT
GERMAN EXHIBIT, ST. LOUIS EXPOSITION



PHOTO ERA

The American Journal of Photography

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MARCH, 1905

NUMBER 3



H. G. MITCHELL

A MILL ON THE AUJEI

THE CAMERA IN PALESTINE

PROF. H. G. MITCHELL

My first impulse to try my hand at photography came in the spring of 1901. I had, it is true, already thought of the matter; for I was at the time preparing for a year in Palestine, and it had occurred to me that I ought to take a camera, but I really doubted my ability to handle one.

My doubts were to some extent dispelled by a friend, who, as she was taking one of the picturesque views to be seen at the West End, made so clear to me the simplicity of her instrument — a 4 x 5 kodak — that I at once went and bought one just like it. To make sure that I could use it I took four pictures, one of which proved so good that, in spite of a warning by the professional who developed it, to the effect that such success was very rare, I left home feeling that I had made a good investment.

From these first four exposures I learned two things: first, that I must use a tripod when I could; and second, that I must always see that my instrument was focused according to directions. A little later, while taking a few pictures in France, I made a third discovery, viz., that almost everything has its picturesque side, if one will take the trouble to look for it.



H. G. MITCHELL

'AT THE GATE OF JERUSALEM—IN THE ARMENIAN MONASTERY

The faithfulness with which I put into practice these lessons — the merest commonplaces, I suppose, to all the readers of the PHOTO ERA — was abundantly rewarded. Yet I should probably not have secured so many interesting pictures of Palestine as I did, had the conditions in that country not favored me.

In the first place, the climate was very propitious. The air was generally clear and transparent. There were weeks at a time when not a cloud appeared in the sky. Even in the rainy season there was hardly a day when the sun did not now and then burst forth brightly enough to permit instantaneous exposures, and that with stop No. 16. In May the light was so intense that it was necessary to use a still smaller aperture. The clearness of the air, of course, increased the range of my camera, and gave to distant objects, like the group of people about a slain sheep near the mill on the Aujeh, an unexpected distinctness.

A second advantage arose from the peculiar character of the country and its people. Palestine, even in the southern part, where it is almost treeless, furnishes by reason of its ruggedness abundant material for pictures. Then, too, the people who inhabit it are remarkably picturesque. The poorest of them drape their scanty rags about them with such unconscious taste that they are always ready to be photographed; and when one gets a shot at a crowd, such as is often seen at the western entrance to Jerusalem, the result is sure to be interesting from an artistic standpoint.

Pictures of the cities and villages of Palestine are abundant; but one can get, from the photographs sold in its shops or taken by the average visitor, no adequate idea of the attractions which Jerusalem, for instance, has for an artist. The reasons are that, as most visitors to the city are interested in the so-called "holy places," these are almost the only objects photographed, and that, as the amateurs are always in a hurry and the professionals have only a pecuniary interest in their work, the resulting pictures give but an imperfect impression of the objects which they



H. G. MITCHELL

A STATUESQUE FIGURE—NO! NO! NO!

are intended to represent. These objects, many of them, make fine pictures when taken from a different position, and there are a thousand others as picturesque as the most attractive among them. In the Armenian monastery, for example, there are pretty nooks and vistas, if one will take the trouble to look for them, and if one will set up one's camera and wait, it will not be long before a handsome monk in his long robe and peaked hood will appear to give a touch of life to the picture.

The Orientals generally are averse to being photographed. In the first place, as Mohammedans, they have no use for pictures. Even the girls can hardly be induced to take an interest in their own portraits. Then, too, they connect the operation in some way with the "evil eye," a constant source of anxiety to them. The transient amateur, therefore, meets with frequent disappointment in his attempts to get attractive faces or figures. The people know so little, however, about such matters, that it is sometimes possible to obtain their pictures without their knowledge. That of the girl at the gate was taken while she was protesting that she would not allow herself to be photographed.

Here, again, time and patience are important considerations. When I began, I could hardly hire those whom I wished to photograph to pose for me; but when it became known that I always rewarded those who obliged me, there was no lack of subjects. The peasant woman in the last picture followed me some distance, begging me to take her picture, before I saw how fine a figure she had or found a place where I could give her an appropriate background. When I was besieged by undesirable subjects, I got rid of them by an appeal to their sense of humor; I said to them, "I am looking for handsome people." At this they would seem puzzled for a moment, then with a sheepish smile turn and leave me.

I could have illustrated the points made with scores of pictures, but those reproduced will doubtless be sufficient to give the reader an idea what can be done with a camera in Palestine.

PRINTING IN GUM-BICHROMATE

CHARLES S. TAYLOR

Although the gum-bichromate, or, as it is more commonly called, gum print, is much talked about as a new printing process, it is in reality fifty years old. The principle of this process was first set forth by a Frenchman, Poitevin by name, in 1855. Pouncy read a paper before a London society in 1859, giving full directions for making prints by this method. In 1863 William Blair also published additional notes on it. But it was not until 1896 that the process was brought to general notice, when Maskell and Demachy exhibited some gum prints at the Paris salon. In 1897 they published their book "Photo-Aquatint, or the Gum-Bichromate Process." This was the beginning of its present popularity.

The gum process has now become a favorite method for those amateurs who use photography as a means to an end, — that end, of course, a picture, — and who are not confined by prejudice or practice to one or two printing processes. Let me sum up the advantages of the gum print. First, splendid possibilities of showing the worker's individuality; second, great freedom in altering the value of the print from that of the negative; third, broad effects of a softness not possible with other methods; fourth, unlimited range in tones and colors; fifth, great latitude in working; sixth, it is as cheap as the cheapest, the blue-print.

Of course the gum print is not suitable for every class of subject, yet one must acknowledge that it certainly fills an uncommonly large field and answers many varied requirements. Generally, it is used to express broad, sketchy effects, although portraits are well within its range. While it is not a process for reproducing minute detail, with certain subjects, plates, paper, and pigment, one can get all detail reasonably required or desired. The best negative is hardly known, I fear; but a plate underexposed with long development, giving what is called a "plucky" negative, is perhaps the best. A negative wherein most of its charm is in the half-tones, will be found the least desirable.

Now to begin practical work: nearly all that is necessary is found in the dark room, and for the first experiments, thirty or forty cents will provide every essential. They are, paper, one ounce of powdered gum arabic (or some mucilage), four ounces of a ten per cent solution of potassium bichromate, a few cents' worth of lampblack, burnt umber, and chrome green, and a flat brush. Any paper can be used, a heavy weight linen bond answering nicely. A sizing is sometimes used, made of a five per cent solution of arrowroot. This I do not find necessary, as the unsized print is in every way as satisfactory, saving considerable bother.

After trying all of the available gums, I have found gum arabic to give the best satisfaction, or, if you prefer, good thick mucilage may be used. Although practicable to keep gum arabic in solution, I much prefer to use it fresh. As most gums are of a somewhat uncertain and unstable composition, only cold water should be used to dissolve them.

The bichromates employed are either potassium bichromate or ammonium bichromate. The former is much cheaper and gives quite as good results. The salt should be made up to a ten per cent solution, filtered into a dark or covered bottle, and kept in a dark corner.

In the matter of pigments used there is a wide choice. Those in general use, covering nearly every ordinary requirement, are lampblack, burnt sienna, burnt umber, Indian red, Venetian red, Van Dyke brown, and chrome green. Sepias and many beautiful shades may be made by mixing the above colors. If dry colors are used, — and I much prefer them, — they should be finely ground, free from dirt or grit. Those used by house painters are good if finely ground. Winsor and Newton's dry or moist water-colors are good and very convenient. The brush is a two-inch camel's or badger hair, costing from twenty-five to seventy-five cents; those obtained at the paint shop are as good and much less expensive than those sold at art store prices. Other articles include a saucer and a board two feet square or more.

The gum, bichromate, and pigment are all mixed together, or the bichromate applied first, then the gum and pigment. The first is much more convenient, and the latter is of no practical advantage. When gum arabic is used the finely powdered gum is put dry into the saucer, wet



MRS. M. S. GAINES

CRAB APPLE BLOSSOMS

with the bichromate solution, and rubbed into solution with the brush. When mixed the color is added, little by little, until the right shade is reached, testing upon a clean piece of paper.

Apply the solution smoothly, first pinning the paper by the corners to the board. Take a little solution upon the brush—avoiding a too fully charged brush—and coat the paper quickly, letting the strokes overlap one another, and using an up-and-down stroke. Now with slightly less solution brush across the paper, which if quickly and carefully done, will produce an even coating, essential to make a first-class print. As the solution dries rapidly it is necessary to coat the paper quickly; not hurriedly, but quickly. The board is set up in the dark room to dry, and in forty or fifty minutes it will be ready to print. The paper keeps well for some time in the dark.

Printing in sunlight with an ordinary negative should take about twenty-five minutes, depending upon the density of the negative and the color used. The lighter the pigment the less exposure is required.

Development is nothing more than washing out the soluble gum with its pigment. First soak the print for a minute or two, face down in a tray of water. Then turn face up on a glass plate (a cleaned negative is just the thing) and gently pour water upon it. If the exposure was correct, development should be completed in five minutes. If development is slow, the print is underexposed, and the water may be poured with more force upon it, or some fine sand or sawdust, mixed with the water, may be poured over the print. A stubborn print may often be hurried by soaking for an hour or more, and if this fails, soaking the print for a few minutes in hot water will hasten matters.

When development is finished, there will be found quite a little yellow stain caused by the bichromate. This can be removed in a plain hypo bath, or in a five per cent solution of common alum, which I have found to be the better way. Let prints remain in the alum bath for ten minutes, then hang up to dry by the corners. If laid flat the alum is likely to spot the prints. No washing is required after the alum bath.

Finished prints are easily marred, and I varnish all valuable ones with the following, which also adds a certain softness to the image: 1 part mastic varnish; 6 parts 90 per cent alcohol. This varnish should be applied with an atomizer.

I must now leave the reader, confident that he will find this process a very fascinating method of photographic expression, and one that he will enjoy more and more, as he grows acquainted with the wonderful possibilities of this charming medium.



H. M. LOMAS
 STAGHOUNDS
 HUNTSMAN AND HOUNDS
 GOING TO THE MEET
 THE TUFTERS
 TAKING OUT THE PACK
 STAGHOUNDS ON THE HILLS



SPORTING PHOTOGRAPHY: STAG HUNTING IN ENGLAND

H. M. LOMAS

To thoroughly enjoy photography as a hobby, it is almost necessary to specialize and take up some especial branch of work. This at first sounds like a ponderous and solemn view of a pastime, you may say. Let me hasten to justify the statement by taking a case in point and asking you to accompany me in mind to the southwest of England, where is the tract of hill and dale moorland, known as Exmoor Forest, over which still roam a goodly number of wild red deer, which are hunted by the Devon and Somerset staghounds. Our especial branch of photography may be called "sporting photography"; our outfit is a small folding camera in a leather case, slung by a shoulder strap, and hanging on the left side, where the left elbow will keep it steady, and where the right hand can quickly get at it. The lens must be one working at a large aperture, for something of interest may happen in one of those deep valleys, where the oaks grow thick and tall, and where the light is dim. If you care for plates, then they must be in a "bag" changing box, and must fit firmly into their sheaths, so as not to rattle and cause dust; if you prefer roll film, as being lighter and more compact, be sure you use a good brand.

It is a glorious September morning, and our horses are at the door, so let us sling on our cameras and be off, for we have a beautiful seven-mile ride to Cloutsham, where the meet will be. There are many carriages scurrying about the little town of Minehead, where we are staying, for it is the height of the season, and the place is full of visitors, most of whom will get out by carriage, cycle, or horseback, to the meet this morning. After a few miles' ride along the road, passing parties of pedestrians all going towards the meet, we get up on to the hills, over the first rise of Dunkery, with heather all around us, and drop down into the richly wooded valley below, then up a steep rise, and we are at the quaint old farmstead of Cloutsham. As it is half an hour yet till the meet, fixed, as usual, for eleven o'clock, we put our horses in an empty stable, and stroll around with the cameras. Carriage loads of people are arriving, with their luncheon baskets, for this field is a favorite picnic spot, and the surrounding country, hill upon hill, can be seen for miles, whilst away in the distance is the blue, shimmering Bristol Channel. There must be a hundred riders here by now, and a hundred or more will soon arrive. The horses are of all sorts and conditions, from comic little shaggy ponies to magnificent thoroughbred hunters, with here and there a sign of Arab blood. The riders are as varied as their mounts; merry farmers discussing the chances of finding a good stag and telling one another anecdotes concerning the damage these fine creatures have done to their crops, or how Mr. So-and-so saw a stag with marvelous antlers three days ago, and "theyne heard say as how they be a goin' to try for he to-day." Men from all parts of England are here, and men well known in many parts of the world, for this is a popular hunt with all sportsmen, this being the only part of England where the wild stag is hunted. Here come the hounds, with the huntsman and others dressed in their scarlet coats, and we are busy with our cameras. "Hounds, please!" is the cry, and off they go to the farm, where all, save about five couples, are left in a barn; these ten lucky ones are taken away to the woods where a good stag is known (or is hoped) to be. Let us get our horses, and ride up on the hill where we can hear the huntsman working the hounds. What is that, among those stunted bushes above the wood? Only a hind, so the hounds are whipped off her. There goes something else over the distant sky line,—a young stag, perhaps three years old, from the size of his antlers,—then at last—yes, there he goes, a fine stag old Farmer Jones said he had seen,—and all is excitement. Away he goes toward the open moor. We have put a fresh spool in the camera; so now, seeing that it is all right, and that our girths and saddle are right, we canter round to where the stag broke covert, and find the huntsman changing to a fresh horse just brought to him, the five couple of hounds panting, and waiting around him. The master has galloped back to the farm, and soon comes up with all the other hounds, a string of a couple of hundred riders following him. After getting a few more pictures here, we quickly close the camera, and are away, galloping for all we are worth, up hill and down



H. M. LOMAS
 LASSOING A STAG
 THE END OF A RUN
 A THREE-HORNED STAG





H. M. LOMAS

KENNELING THE PACK

slippery and dangerous dale, sometimes along narrow hill tracks, going single file, at others going like a cavalry charge over the thick, deep heather. Here and there a horse without a rider — look out, that's a bog! — two men in it already. Take care of these nasty pits in the heather, and the hidden stones and slippery rocks. The pace is telling, and the field is strewn about over a mile or two of country; don't overtire your horse, and choose the easiest going. We are right away on the moor now, and for a few minutes hounds puzzle up and down a little stream, and cannot pick up the line, then hit it off, and we are away again. There is a call away to the right; somebody has viewed the stag. There he goes, down the slippery steep to Badgworthy Waters, the hounds gaining on him. Take care! Let's get off and lead our horses, for the hillside is *very* steep and all the tracks full of hurrying horses. Almost down, but not quite, old mare, over a nasty place. There, right below us, is the stag, standing at bay in the water, hounds around him, hen off again, then in a big pool he stops and defies them. Be quick, give me your horse to hold, and get some pictures as he lunges at the hounds, with the huntsman and whip stealing round behind to try to lasso him, before any hounds get killed. Look! there is a big man, well known for his pluck — he has left his horse. Surely not? Yes, as quick as thought he is round behind the stag, catches an antler from behind, then in rushes the huntsman, and they have got him, bend his antlers back, and secure him. A dangerous job it is to take a stag, for to hesitate is to be lost, — a cut with those feet or a stab with an antler would be, to say the least, very serious. As the trophies from the dead stag are being given away, and the late comers straggle in on tired horses, we get some more pictures, and as we jog home in the cool of the evening, after giving our horses a gruel at a village on the way, we congratulate ourselves on what we hope lies invisible within our cameras. This is only one sort of sport; there are many others which will give good and interesting subjects to the artist and sportsman with a camera.

Let the hand camera accompany you in your favorite pleasures, and in this way "specialize," and the pictures you will in time collect will be a source of pleasure to yourself, and made into slides will make an interesting lecture series, to exhibit to your friends.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

THIRD PAPER — EXPOSURE

1. *Latitude of Exposure.* — Whether technical excellence or pictorial effect is desired, the exposure of the plate or film is the most important factor in the process of making photographs, as the negative is the basis of all photographic work. Professional photographers, who work for the most part under conditions of considerable uniformity, acquire after long experience a sort of intuitive judgment of what the correct exposure must be under the normal conditions they frequently meet with. Such men in writing on exposure usually give beginners to understand that it is learned only by experiment and dearly bought experience. While it is true that experience is a good teacher, it is also true that it is a hard master; and the length of the experimental period, during which the beginner is getting his experience, can be greatly reduced and made easier by a knowledge of the principles which govern the subject. In other words, the worker can bring to his aid a record of the experiments and experiences of others to guide and hasten him through his own experimental stage. After much careful study and experiment, it has been possible to tabulate the required exposures for nearly every kind of subject under almost all possible circumstances. Owing to the many varying conditions which must be taken into consideration, the exposures given in the tables accompanying this paper are approximate and not exactly correct. But for the fact that there is considerable latitude of exposure, there would not be as many good photographs as there are. Absolute accuracy of exposure is not necessary for the production of good results; but this fact should never serve as an excuse for careless and haphazard work. The ideal exposure should always be approached as nearly as possible, although a fair negative may be secured with any exposure between $\frac{3}{4}$ and 2 seconds, when the correct time should be 1 second. Very rapid plates do not give as great latitude as slower brands, especially if the object to be photographed or the light be bright.

2. *Exposure Factors.* — A full understanding of the factors influencing exposure is necessary in order to work intelligently. These factors group themselves under four principal divisions, as follows: (1) The intensity of the light, which varies with the altitude of the sun, the time of the year, the time of day, and the condition of the atmosphere; (2) the nature of the subject, whether indoors or out, in sunlight or shadow, whether or not including movement, and depending also upon the distance and color; (3) the speed of the plates or films, depending upon the sensitiveness of the emulsion; (4) the diaphragm or stop.

3. *Intensity of Light.* — The intensity of light varies with the altitude of the sun, the time of the year, the time of day,



J. H. McCORKLE
SWEET PEAS

Table I.—This table gives the exposures required by the different subjects mentioned for every hour of the day and every month of the year when taken in bright sunlight, using U. S. stop No. 8 or f. 11.3 with the fastest plates, such as are given in Class I of Table II, where the comparative speeds or classes will be found in the first vertical column.

Average landscape with light foreground. Buildings, persons, animals, and moving objects at least 30 feet away.

Hour.			June	May July	April Aug.	Mar. Sept.	Feb. Oct.	Jan. Nov.	Dec.
A.	M.	P. M.							
11	12	1	1-50	1-50	1-40	1-30	1-25	1-15	1-12
10		2	1-50	1-50	1-40	1-30	1-20	1-12	1-10
9		3	1-50	1-40	1-30	1-25	1-15	1-10	1-5
8		4	1-40	1-30	1-25	1-15	1-12	1-5	1-2
7		5	1-25	1-20	1-15	1-8	1-5	1-2	
6		6	1-12	1-10	1-8	1-2			
5		7	1-5	1-3	1-2				

Open landscape without foreground. Light-colored objects, such as white buildings, statuary, and monuments.

Hour.			June	May July	April Aug.	Mar. Sept.	Feb. Oct.	Jan. Nov.	Dec.
A.	M.	P. M.							
11	12	1	1-100	1-100	1-80	1-60	1-50	1-30	1-25
10		2	1-100	1-100	1-80	1-60	1-40	1-25	1-20
9		3	1-100	1-80	1-60	1-50	1-30	1-20	1-10
8		4	1-80	1-60	1-50	1-30	1-25	1-10	1-4
7		5	1-50	1-40	1-30	1-15	1-10	1-4	
6		6	1-25	1-20	1-15	1-4			
5		7	1-10	1-6	1-4				

Portraits outdoors. Landscapes with heavy foliage. Red brick buildings and other red, yellow, and dark objects. Shipping about the docks.

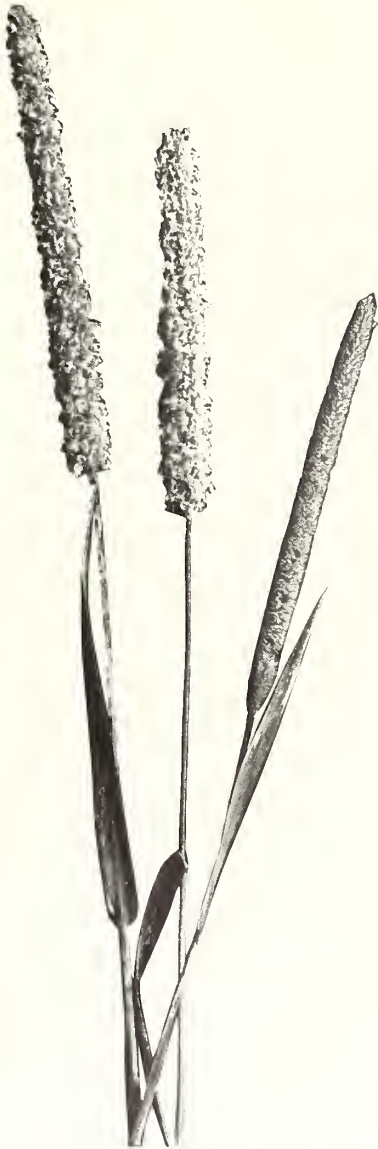
Hour.			June	May July	April Aug.	Mar. Sept.	Feb. Oct.	Jan. Nov.	Dec.
A.	M.	P. M.							
11	12	1	1-25	1-25	1-20	1-15	1-12	1-8	1-6
10		2	1-25	1-25	1-20	1-15	1-10	1-6	1-5
9		3	1-25	1-20	1-15	1-12	1-8	1-5	2-5
8		4	1-20	1-15	1-12	1-8	1-6	2-5	1
7		5	1-12	1-10	1-8	1-4	2-5	1	
6		6	1-6	1-5	1-4	1			
5		7	2-5	2-3	1				

Snow scenes. Very distant landscapes. Seashore views. Yachts under sail. Heavy clouds.

Hour.			June	May July	April Aug.	Mar. Sept.	Feb. Oct.	Jan. Nov.	Dec.
A.	M.	P. M.							
11	12	1	1-200	1-200	1-150	1-125	1-100	1-60	1-50
10		2	1-200	1-200	1-150	1-125	1-80	1-50	1-40
9		3	1-200	1-150	1-125	1-100	1-60	1-40	1-20
8		4	1-150	1-125	1-100	1-60	1-50	1-20	1-8
7		5	1-100	1-80	1-60	1-30	1-20	1-8	
6		6	1-50	1-40	1-30	1-8			
5		7	1-20	1-12	1-8				

Sky and fleecy clouds. Very distant sea views.

Hour.			June	May July	April Aug.	Mar. Sept.	Feb. Oct.	Jan. Nov.	Dec.
A.	M.	P. M.							
11	12	1	1-400	1-400	1-300	1-250	1-200	1-125	1-100
10		2	1-400	1-400	1-300	1-250	1-150	1-100	1-80
9		3	1-400	1-300	1-250	1-200	1-125	1-80	1-40
8		4	1-300	1-250	1-200	1-125	1-100	1-40	1-15
7		5	1-200	1-150	1-125	1-60	1-40	1-15	
6		6	1-100	1-80	1-60	1-15			
5		7	1-40	1-25	1-15				



MRS. E. H. BAYNES
TIMOTHY

and the condition of the atmosphere. Actual experience has shown that during the summer months the correct exposure for an average landscape in sunlight at midday, using U. S. stop No. 8 and a rapid plate, is 1-50 of a second. This furnishes a basis for further experiment, and from it has been compiled the whole system of tables. Exposure gradually increases until December, when it is four times that required in June, owing to the weakening of the light. Likewise, exposure must be longer early in the morning and late in the afternoon than it is at noon. Table I gives the exposures required by five different classes of views for every hour of the day and month of the year. The conditions of the atmosphere may be grouped under four headings, as follows: (1) intense sunlight; (2) sun obscured, but bright lighting; (3) sun obscured, dull; (4) heavy clouds, very dull. If intense sunlight requires 1 second exposure, a very dull day with heavy clouds will require four times 1 second. Table II shows these comparative values in the first horizontal column.

4. *Nature of the Subject.* — There is an old maxim, "Expose for the shadows and let the high lights take care of themselves." It is with a constant regard for this statement that all exposure tables are compiled. This will be readily seen in the examples which follow. The white side of a house in sunlight requires very short exposure, but a woman standing in front of it in the shadow of a trellis of vines necessitates giving a longer exposure. If it is not given, the result will be a black woman against a white house. A distant landscape, such as rolls away from the top of a hill, does not require so great an exposure as a landscape with dark foliage or a group of cattle in the foreground.

A view called an "average landscape" is taken as a unit of comparison for all classes of photographs. In this class are included views having light foregrounds composed of a few shadows or small dark objects, buildings, persons, or animals at least thirty feet away, and also most street scenes.

An "open landscape" includes views without foreground, light-colored objects, such as white buildings and monuments, and requires one half the exposure needed for an average landscape.

Portraits outdoors, landscapes with heavy foliage, shipping about the docks, red brick buildings, and other red, yellow, and dark objects require double the exposure needed for an average landscape.

Snow scenes, very distant landscapes, seashore views, heavy clouds and yachts under sail require one fourth the exposure needed for an average landscape.

Sky, fleecy clouds, and very distant sea views require only one eighth the exposure needed for an average landscape.

Interiors require from 500 to 5000 times the exposure needed for an average landscape, according to the exterior, as well as the interior, conditions.

Table I gives the correct exposure, taking into consideration the nature of the subject as given above.

5. *Speed of Plate.* — The best brands of plates may be divided into six speeds, according to their sensitiveness, and conveniently rated as shown in the first vertical column of Table II. Snap-shots and rapidly moving objects should be taken on plates listed in Class I. For subjects which do not demand such rapidity, the plates in Classes 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ will give much more latitude.

6. *Size of Stop.* — The smaller the stop in the lens the less light passes through it, and the longer must be the exposure. Stops or diaphragms are usually, in America, numbered according to one of two systems which mean the same thing if correctly used. Table IV gives comparative exposures with different stops. It will be noticed that the exposure with any stop is double that of the next larger and one half that of the one smaller. Both methods of marking are used in the table so that there can be no mistake. Some shutter markings drop the decimals in the f system; thus, f. 11.3 is written f. 11. Nearly all American cameras now on the market employ the Uniform System numbers. If this is the system used on your camera, there will be no decimal numbers, and 11, 22, and 45 will not appear on your shutter.



S. D. PINE

EVENING QUIET

Table II. — This table gives ratios which are to be used in Table III. The first vertical column gives the comparative speeds of different brands of plates. The first horizontal column gives the comparative exposures under different conditions of atmosphere. Numbers at the intersection of vertical and horizontal columns give a ratio taking into consideration both speed of plate and condition of atmosphere.

COMPARATIVE SPEEDS OF PLATES AND FILMS	CONDITION OF ATMOSPHERE.			
	Intense sunlight.	Sun obscured, but bright lighting.	Sun obscured, dull.	Heavy clouds, very dull.
Seed's S. 27, Cramer's Crown and Trichromatic, Hammer's Special Red Label, Standard Imperial Portrait, Stanley's S. 50, Eastman's N. C. Film and Kodoid Plate, Premo Film pack. (These films, although listed in this class, are a trifle slower than the plates named above, and full exposure must be given.)	1	2	3	4
Seed's S. 26x, L. Orthochromatic, C. Orthochromatic, Non-halation and Non-halation Orthochromatic, R. O. C. Plate, Eastman's Extra Rapid, New Record Extra Rapid, Ansco Film.	$1\frac{1}{4}$	$2\frac{1}{2}$	4	5
Seed's S. 26, New Record Orthochromatic.	$1\frac{1}{2}$	3	5	6
Cramer's Medium Isochromatic and Non-halation S. C; Hammer's Fast.	2	4	6	8
Seed's S. 23, Cramer's Anchor.	$2\frac{1}{2}$	5	8	10
Hammer's Slow, Agfa Isola.	4	8	12	16
Cramer's Slow Isochromatic.	8	16	24	32



JOHN W. SCHULER

MIDSUMMER

Table III.—This table gives the exposure when the intensity of the light and the speed of the plate differ from the conditions named in Table I.

1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	5	6	8	10	12	16	24	32
1-400	1-300	1-250	1-200	1-150	1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-15	1-12
1-300	1-250	1-200	1-150	1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-12	1-10
1-250	1-200	1-150	1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-10	1-8
1-200	1-150	1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-8	1-6
1-150	1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-6	1-5
1-125	1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-5	1-4
1-100	1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-4	1-3
1-80	1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-3	2-5
1-60	1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	2-5	1-2
1-50	1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	1-2	2-3
1-40	1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	3-5	4-5
1-30	1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	4-5	1
1-25	1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	2-3	1	1 1-3
1-20	1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	3-5	4-5	1 1-4	1 1-2
1-15	1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	2-3	4-5	1	1 1-2	2
1-12	1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	2-3	5-6	1	1 1-3	2	2 1-2
1-10	1-8	1-6	1-5	1-4	1-3	2-5	1-2	3-5	4-5	1	1 1-4	1 1-2	2 1-2	3
1-8	1-6	1-5	1-4	1-3	2-5	1-2	5-8	3-4	1	1 1-3	1 1-2	2	3	4
1-6	1-5	1-4	1-3	2-5	1-2	2-3	5-6	1	1 1-3	1 1-2	2	3	4	5
1-5	1-4	1-3	2-5	1-2	3-5	4-5	1	1 1-4	1 1-2	2	2 1-2	3 1-2	5	6
1-4	1-3	2-5	1-2	5-8	3-4	1	1 1-4	1 1-2	2	2 1-2	3	4	6	8
1-3	2-5	1-2	2-3	5-6	1	1 1-3	1 1-2	2	2 1-2	3 1-2	4	5	8	10
2-5	1-2	3-5	4-5	1	1 1-4	1 1-2	2	2 1-2	3	4	5	6	10	12
1-2	5-8	3-4	1	1 1-4	1 1-2	2	2 1-2	3	4	5	6	8	12	16
2-3	5-6	1	1 1-3	1 1-2	2	3	3 1-2	4	6	7	8	12	16	22
1	1 1-4	1 1-2	2	2 1-2	3	4	5	6	8	10	12	16	24	32

7. *The Stop to Use.* — Four principal considerations influence the use of stops, and the different sizes must be used with constant reference to these considerations. They are the intensity of the light, the time in which the exposure must be made, the object to be photographed, and the style of picture to be made. The proper stop to use for wide landscape views is the largest which will give a clear picture at the edges of the plate. If a very small stop is used, the resulting picture will be flat, with little contrast, the objects all appearing to be on the same plane. Large stops render objects exactly as they appear to the eye with respect to distance, proportion, and lighting, and the quality of so doing is spoken of as aerial perspective. The turn of a little pasture brook, the corner of a picturesque old fence or stone wall covered with ivy, and other short views such as these, require a small stop to secure the detail which is usually the beauty of photographs representing very little distance. In my mind is the very vivid mental picture of one of the best short views I ever saw; giant willows were bending over a little stream, on the placid surface of which they cast dark reflections, while the bank was made interesting in the foreground by the detail of beautiful ferns and nodding grasses. The view in question was made on a Stanley plate at three o'clock in the afternoon by an exposure of one half second with stop No. 64. If a photograph is to be made of a distant town, it will require different treatment from the usual open landscape. A stop should be used which is sufficiently small to bring all the buildings which are at the edges of the plate into as sharp focus as those at the center. For portraits with the ordinary lens a medium stop is best; No. 8, or with a slower lens, No. 16, will be about right. Never focus too sharply, but leave the lens rather just enough out of perfect focus to soften the lines of the face. If portraits are to be made out of doors, use stop No. 4 or No. 8, or as large as will give a sufficiently clear picture with the lens focused on the figure instead of the landscape, which should appear as masses of light and shade that suggest, but do not actually picture, the scene. It will be wise to use a smaller stop for groups in order to bring all of the faces into the same focus. The best street views are usually made by very short exposures on extra rapid plates with stop No. 4 or No. 8. A small stop must be used to secure sharpness in photographing interiors, and stops No. 16, 32, and 64 will be found useful in this class of work. Stops No. 32 and 64 will not often be found too small unless the room is very long. If a figure is to be included in an interior view, a large stop should be used, provided, of course, that the rapidity of the lens will warrant a short exposure without sacrificing definition. When marine pictures are to be made a small stop must be used to prevent over-exposure, owing to the intense light reflected from the water. Stop No. 16 is very much used for such views, but surf pictures often require No. 32 with 1-100 of a second exposure. Stop No. 128 is of use principally for time exposures out of doors in cloudy weather, and the time required will range from 1-5 second to 5 seconds, according to the light. The experiences of the best workers have shown that slow plates, preferably non-halation or orthochromatic, with as long an exposure as the trying conditions of light will permit, produce the best snow pictures. If the light is very brilliant, stop No. 64, or even No. 128, may at times be used; but the early morning and late afternoon, when the shadows are long, soft, and effective, are by far the best times for making such views, and stop No. 32 may be used with good effect under such conditions.

8. *Shadows.* — Shade is as essential to pictorial effect as light, and therefore whenever it is possible the sun should be to the right or left of the camera and not directly back of it, as many suppose. The long shadows cast by objects early and late in the day are very effective, and more beautiful pictures can be taken during those hours than at noon, when the shadows are short and black. The proper exposure for shadows depends upon whether it is desired to represent the object in shadow or to make a bright picture of it as it would appear in subdued light. If the former is the case, a short exposure will give the needed contrast; but if the latter, a long exposure will be required. During the summer objects in deep shadow need three or four times the exposure in sunlight, and in winter about double the exposure. An ordinary street view in which the shadows are thirty feet or more away will require no greater exposure than that of an average landscape. Should the shadows be nearer in such a view, give an exposure slightly



NEW YORK
SALON

CARLE E. SEMON

HORSES DRINKING

Table IV.—The exposures given in the preceding tables are for U. S. stop No. 8, or f. 11.3. This table gives the comparative exposures with other stops.

U. S. 2	U. S. 4	U. S. 8	U. S. 16	U. S. 32	U. S. 64	U. S. 128	U. S. 256	U. S. 2	U. S. 4	U. S. 8	U. S. 16	U. S. 32	U. S. 64	U. S. 128	U. S. 256
F 5.6	F 8	F 11.3	F 16	F 22.6	F 32	F 45.2	F 64	F 5.6	F 8	F 11.3	F 16	F 22.6	F 32	F 45.2	F 64
1-1600	1-800	1-400	1-200	1-100	1-50	1-25	1-12	1-20	1-10	1-5	2-5	4-5	1 1-2	3	6
1-1200	1-600	1-300	1-150	1-80	1-40	1-20	1-10	1-15	1-8	1-4	1-2	1	2	4	8
1-1000	1-500	1-250	1-125	1-60	1-30	1-15	1-8	1-12	1-6	1-3	2-3	1 1-3	2 1-2	5	10
1-800	1-400	1-200	1-100	1-50	1-25	1-12	1-6	1-10	1-5	2-5	4-5	1 1-2	3	6	13
1-600	1-300	1-150	1-80	1-40	1-20	1-10	1-5	1-8	1-4	1-2	1	2	4	8	16
1-500	1-250	1-125	1-60	1-30	1-15	1-8	1-4	1-6	1-3	3-5	1 1-4	2 1-2	5	10	19
1-400	1-200	1-100	1-50	1-25	1-12	1-6	1-3	1-6	1-3	5-8	1 1-4	2 1-2	5	10	20
1-300	1-150	1-80	1-40	1-20	1-10	1-5	2-5	1-6	1-3	2-3	1 1-3	2 1-2	5	11	22
1-250	1-125	1-60	1-30	1-15	1-8	1-4	1-2	1-5	3-8	3-4	1 1-2	3	6	12	24
1-200	1-100	1-50	1-25	1-12	1-6	1-3	2-3	1-5	2-5	4-5	1 1-2	3	6	13	26
1-150	1-80	1-40	1-20	1-10	1-5	2-5	4-5	1-5	2-5	5-6	2	3 1-2	7	13	27
1-125	1-60	1-30	1-15	1-8	1-4	1-2	1	1-4	1-2	1	2	4	8	16	32
1-100	1-50	1-25	1-12	1-6	1-3	2-3	1 1-4	1-3	5-8	1 1-4	2 1-2	5	10	20	40
1-80	1-40	1-20	1-10	1-5	2-5	4-5	1 1-2	1-3	2-3	1 1-3	3	6	11	22	43
1-60	1-30	1-15	1-8	1-4	1-2	1	2	3-8	3-4	1 1-2	3	6	12	24	48
1-50	1-25	1-12	1-6	1-3	2-3	1 1-3	2 1-2	1-2	1	2	4	8	16	32	64
1-40	1-20	1-10	1-5	2-5	4-5	1 1-2	3	5-8	1 1-4	2 1-2	5	10	20	40	80
1-30	1-15	1-8	1-4	1-2	1	2	4	3-4	1 1-2	3	6	12	24	48	96
1-25	1-12	1-6	1-3	2-3	1 1-3	2 1-2	5	1	1 3-4	3 1-2	7	14	28	56	112



THEODORE EITEL

THE BEECHES

shorter than that required by the shadows, thus securing detail in the shadows and at the same time contrast between light and shade. The beauty of summer and winter landscapes is greatly increased by shadows; but views in late autumn are best without them, and the crispness of such pictures can be best secured by a full exposure and strong development.

9. *Explanation of the Tables.* — Most outdoor exposures are made in sunlight with U. S. stop No. 8 or f. 11.3 on a very rapid plate. Table I gives the correct exposures required by five different classes of subjects under these conditions. Its use can be best illustrated by supposing an average landscape to be taken at 10 A.M. in July. The month is at the top of each section of the table and the hour is at the left-hand side. Find these columns, and where they intersect will be seen 1-50, which means that 1-50 second is the correct exposure.

Should the condition of the atmosphere or the speed of the plate be different from the conditions named in Table I, reference must be made to Table II, which gives ratios to be used in



MRS. E. E. TRUMBULL

SAND DUNES IN WINTER

Table III. The condition of the atmosphere will be found in one of the vertical columns and the plate to be used in one of the horizontal columns, and where the two intersect will be given the ratio to be used in Table III, as described hereafter. Thus, if one of Cramer's Anchor plates is to be used on a very dull day when the sun is obscured by heavy clouds, the exposure will be ten times that required in intense sunlight with a very rapid plate.

Remembering that the exposure for the view in question was 1-50 second, and that the ratio in Table II was 10, find 1-50 in the first vertical column of Table III and 10 in the upper horizontal row; where the two intersect will be found 1-5, which means that the correct exposure is 1-5 second.

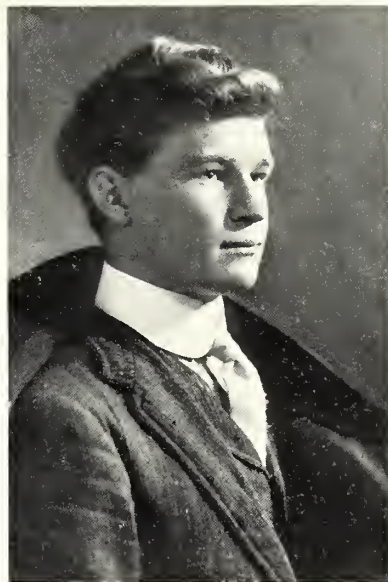
Should it be deemed advisable to use a different stop than U. S. No. 8, such as No. 32, for instance, Table IV gives the exposures with different stops. Thus, in the column headed No. 8 or f. 11.3, find 1-5, and two spaces to the right is seen 4-5, in the column headed No. 32 or f. 22.6. Four fifths of a second is therefore the correct exposure, taking into consideration all the conditions.

10. *Using the Tables.* — The worker will find in some cases that his shutter will not produce the required speed; but all tables contain this defect if they are accurate, or even approximately so. Give the nearest shutter speed if it is approximately the same. Should it be too short, enlarge the diaphragm a little, or, where the construction of the shutter allows it, move the disk or arrow to a point between two speeds. If the nearest shutter speed is too long, use a smaller stop, always getting the exposure as nearly correct as possible. A common fault of the beginner is underexposure. Always give a full, rather than a short, exposure. Overexposure can usually be modified, and that subject will be taken up later in this series of papers; but underexposure cannot be so easily remedied, and will seldom produce a satisfactory negative. The more contrast there is in a subject the more it may be overexposed.

The photographer should as soon as possible try to free himself from the necessity of constantly using tables for anything except unusual conditions. If U. S. stop No. 8 is always taken as a standard, and all exposures and comparisons are calculated with that in mind, it is then very easy to find the exposure required by another stop. Always think of all exposures with the same stop, and you will soon know the value of every light, so that the subject of exposure will no longer seem a mountain in your path, as it did at the outset.



FELIX RAYMER



THE POSE AND THE RESULT

PORTRAIT LIGHTING AT A WINDOW

FELIX RAYMER

In this series of articles it is my intention to take the reader through the process of making at a window such pictures as the professional operator makes every day under his skylight. It has been said hundreds of times that it is impossible to get the same soft, delicate results at a window that the large light of the professional gives. In recent years, however, there has been such a demand from the people for work made in their homes that there are many studios in the cities which employ operators for the very purpose of waiting on such customers in their houses. This, of course, necessitates the understanding, by the operator, of the principles of lighting, and, when he has mastered them, he is competent to make equally good work under any style or size of light. Several years ago we had some of this work to do in the studio where I was operator, and I propose to take the reader into the work by easy stages, giving him each step to be taken as it comes up in the work. If these steps are followed as given, and with the system they are intended to induce in the work, there will be very little trouble in becoming familiar with the process in a short time.

First: Every photographer, intending to go to some private house for the purpose of making a negative, should provide himself with two of the folding backgrounds that have recently been placed on the market, which are very reasonable in price and can be procured from any stock dealer. One should be black and the other white. This will give any effect desired, from a full white to a full black; although I will say just here that it is an exceedingly rare thing for me to desire a perfectly white or perfectly black background. Different shades can be obtained by facing either the white or black toward, or away from, the light. The more nearly it faces the light, the lighter it will appear in tone. Another accessory will be a piece of white cheese-cloth, about three feet wide and four feet long. The rest of the accessories can be found in most houses, so these will be all that is needed, except, of course, the camera and working tools.

Second: On most windows there is a shade fastened at the top of the casing. This shade is arranged to draw down from the top to the bottom, on a spring roller. To make it an easy matter to control your light, and get it exactly as wanted, it will be a good plan to change this



W. G. CORTHELL

DURHAM CATHEDRAL

shade from the top, and place it at the bottom of the window, so that it can be drawn up to the top. This makes it possible to change the light the smallest fraction of an inch, if such a thing is necessary, as it often is where one is working in such close quarters. If one does not care to go to the trouble of taking off the curtain or shade and reversing it, one may hang a quilt or opaque cloth of some kind across the lower sash of the window, which can be arranged to answer the purpose.

Third: Cover the lower part of the window as high as the head of the subject, it matters not how high that may be. Never, in making portraits, should the light fall on the sitter from a point lower than the top of the head. If the sitter is standing and a full or three-quarter figure is to be made, the lower part of the window will have to be covered to a higher point than would be the case if a bust sitting is to be made. There are times when the light will be covered to a point above the sitter's head, but it should never come in lower. In working at a window I have never had more top light than I needed. So, for that reason, I have not found it necessary to have a curtain pulled from the top.

Fourth: Pose your sitter the same distance from the light as the light measures in width. If it is a window five feet wide, the sitter should be five feet from it. If it is four feet wide, pose him four feet away, and so on. To secure the effect of lighting shown in our illustration, which is known to the professional worker as the "Rembrandt effect," let the sitter face directly toward the light, so that it will fall full in his face.

Fifth: Now have the sitter begin to turn away from the light very slowly, and when the point is reached where the light on the shadow ear has just left it, there is where to stop. Now, this light on the shadow ear is of the utmost importance to correct lighting from any source. Never in making portraits do we want a light striking both sides of the face. If there is a light on the shadow ear, it will give the effect of having had two sources of light—one on the light side and a much smaller one on the shadow side which fell only on the ear. This would cause an exaggeration of the ear by concentrating the light on it, and accentuating that part of the head which should be subordinated. It is through the use of shadow, which is of as much importance as light, that we secure subordination, or a reduction of im-



OSCAR DE TEFFÉ

MY SISTER

portance in certain portions of our lighting. Through the use of light and the concentration of it we secure accentuation, or the emphasis of certain portions of the lighting.

Sixth: When the point has been reached where the light has just left the shadow ear, let the model sit perfectly still for a few moments, and then study the effect of the lighting. Let him look at an object directly in front of him, so that the eyes may be seen in the correct position; and then see if there is a very small spark of light in each of them. This is what the professional man calls the "catch light," and it is necessary to the life of the eye. Without it there would be no way of telling the color of the eye, whether light or dark. If there is not enough light in the eye to get this, the operator knows that it is from a lack of side light. That is, the shade covering the lower portion of the window has been raised too high, so that the light cannot get into the eye under the brow. In the case of deep-set eyes this shade will have to be much lower than would be the case if the eyes were more prominent. The same is true of a portrait of a model wearing a hat. The shade must be lowered so that the light can get in under it.

Seventh: Look at the shadow that is cast from the nose. It will extend away from the nose on the shadow cheek. The correct direction for this shadow should be toward the corner of the mouth, on the shadow side of the face. If it runs out farther on the face and past the corner of the mouth, it is an indication of too low a light. The shade on the lower portion of the window must be raised until it takes the right direction. If it runs directly downward from the nose, and covers the center of the lip, it is caused by too much light from the top. In that case move the subject farther from the light until it takes the right direction. Remember that the right direction is toward the corner of the mouth. It need not be long enough to reach the mouth, but must extend in that direction, if the best work is wanted.



KATHERINE BINGHAM

LE PRINTEMPS

Eighth: Now decide the strength of the light, whether it is to be strong with deep shadows, or soft with transparent, silky shadows. Either class of work is correct; one operator will like the first and another will prefer the latter. Look at the high lights first, and examine them carefully. The highest, as can be seen by referring to the portrait accompanying this article, will be on the forehead, toward the light. This high light should not be so bright that the flesh tints cannot be seen through it. Our high lights should never be so white that they will print as white paper. If the highest light does not show the flesh tints all through it, the piece of white cheese-cloth, mentioned above, should be hung over the window, letting the light fall through it on the sitter. This will act in the same way as ground glass does in the professional's studio, and cause a diffusion of the light, making the high lights softer, and bringing them down to a harmony with the shadows.

Ninth: Now look into the shadows. The deepest shadow on the face will be just under the ear on the shadow side of the head. If you cannot see the detail or flesh tints in it, the shadow is too deep. Take a white card about eighteen by twenty inches, and when ready for the exposure hold this in one hand while making the exposure with the other, and throw just enough reflected light on the deep shadow to bring out the flesh tints.

Tenth: To secure the effect shown in our illustration, the camera should be stationed just twice as far from the light as the subject. This will bring the camera on the shadow side and will show a greater portion of the face in shadow than in light. This being so, the exposure will be longer than would be the case if we were on the light side of the figure. In my last article to this journal I considered what is known to operators as "plain lighting." In this the



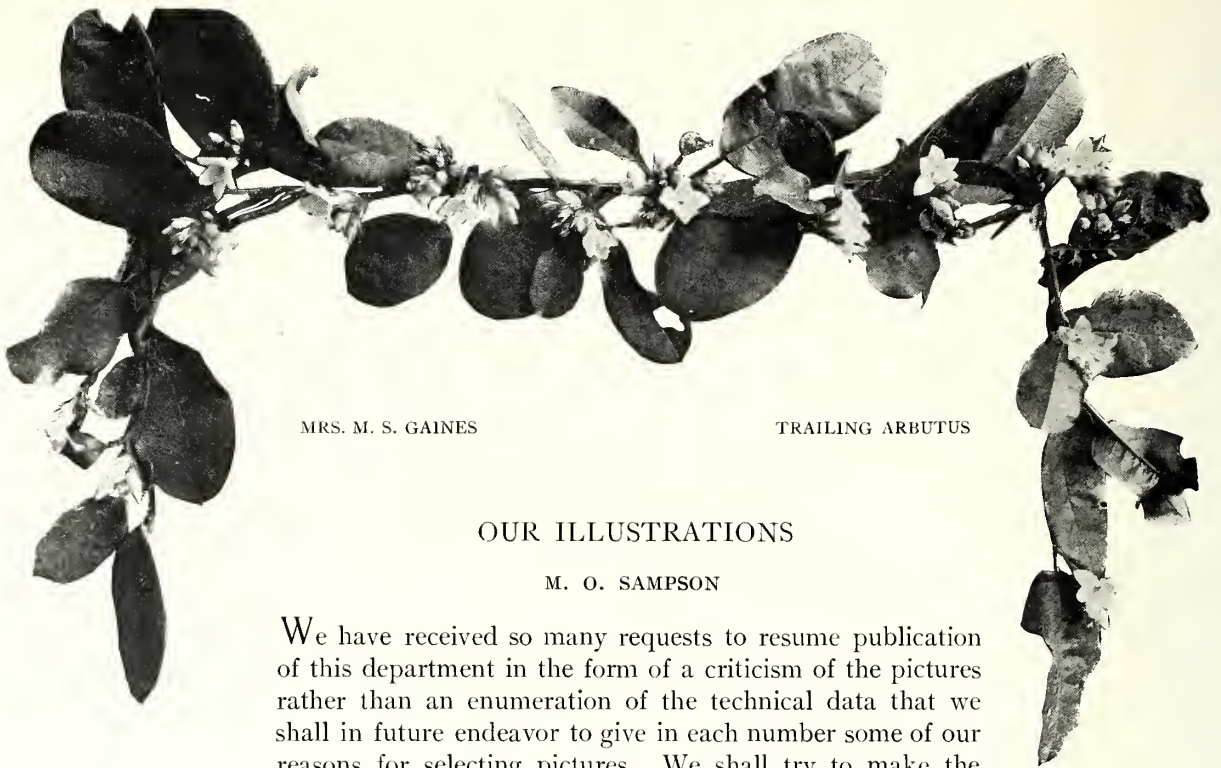
FEDORA E. D. BROWN

LANDSCAPE

camera was nearer the light than the sitter was, so that it will be well for the reader to carefully read each article, and follow instructions in steps as given. In that way it will be easier to keep the different effects separated. Do not trust to memory, for it is the most treacherous thing imaginable.

Eleventh: Now place the ground, and note carefully how it harmonizes with the effect of the lighting. If it is turned too much toward the window, it may appear too light to harmonize with the effect of the light. Turn it farther from the light and a lower key will be secured. If it is too dark, it can be turned farther toward the light, and a better effect secured. Do not have the ground and face in too great a contrast. If this is done, it will often cause the outline of the figure to detract from the more important parts.

Twelfth: In exposing be sure to do it so that all of the detail will be secured in the shadows. If they are undertimed, there can be but one result, harshness. Give full time. It will make the whole effect of light and shade softer and more delicate, and thus do away with the feeling that as good work cannot be made at a window as under a skylight.



MRS. M. S. GAINES

TRAILING ARBUTUS

OUR ILLUSTRATIONS

M. O. SAMPSON

We have received so many requests to resume publication of this department in the form of a criticism of the pictures rather than an enumeration of the technical data that we shall in future endeavor to give in each number some of our reasons for selecting pictures. We shall try to make the criticisms constructive and helpful, but not exhaustive.

Frontispiece: A Portrait, by W. Weimar. — This is an excellent example of the modern German school of portraiture which excels in work on a large scale and treatment in masses. The composition is original and perhaps a little striking, but the very limitation of the picture space draws the attention more strongly to the features. The modeling is beautifully soft and the textures are admirably rendered. Retouching, if employed, has been very judiciously used. The one weak point is the strong high light in the hair. By putting the finger over this spot, the picture will be seen to be very much stronger.

Pictures of Palestine, by H. G. Mitchell. — The illustrations in the Palestine article are particularly noticeable for their simplicity of treatment. In every case the author has made some one object the center of interest and, as far as possible in street scenes, avoided the usual distracting surroundings which so often make travel pictures uninteresting to the casual observer. In the gate picture he has included the interesting groups of people gathered in the streets; but in spite of all the strong contrasts, unavoidable with the variegated colors of the costumes, the eye finally reaches the strong masonry mass of the city gate. "The Mill on the Aujeh" is one of the few pictures of a desert landscape with palms which has artistic value.

Stag and Hounds, by H. M. Lomas. — These illustrations were evidently not intended to be studies in composition, but show in nearly every instance a well-balanced picture with figures well placed. They illustrate what a small hand camera can do when used by a man who consciously or unconsciously understands composition and balance.

Evening Quiet, by S. D. Pine. — This picture is technically good. It is one of those views of home life which are so easily obtained and may be of great value in many ways. It is not a flash-light picture, but an exposure of about five minutes in a well-lighted room. There are some weak points, such as the strong black line coming above the man's head. The reflection of the lamp in the doors of the bookcase makes distracting spots, which might have been avoided. Lay a piece of paper on the left side of the print, covering the reflection, and see if it is not better in some ways; the sacrificing, however, of the table and books would be unfortunate.



MRS. M. S. GAINES

Midsummer, by J. W. Schuler. — This quiet and restful scene is fairly well balanced. The composition is also simple. The interest in the picture begins at the lower left-hand corner and continues along the brook. The cow, which adds a secondary interest, is a trifle too large. Possibly it would have been better had the cow been farther back. The atmospheric rendering is truthful and the scale of values well chosen.

Horses Drinking, by Carle E. Semon. — The point of interest in this picture is, of course, the horses. The line of balance runs diagonally across the print from the lower left-hand corner to the upper right, the tree in the background following the same general direction, which is fortunate. The horses, as placed, are practically crossing the picture diagonally from left to right, the opposite general direction from that of the brook. The strong spots in the print are the horses, their light color being the highest note. They seem to be rather too near the center. Trimming the lower and right sides would not remedy this. It would be better to add considerably more space at the top and left.

Beeches, by Theodore Eitel. — This illustrates a very simple grouping and is especially interesting as an example of pleasing parallel composition. There is a quiet harmony in the vertical lines and spaces. The tree in the foreground gives an accent to the whole picture. This simple line idea has been used repeatedly by artists and designers and can be found in Whistler's works and Puvis de Chavannes' wall decorations.

Sand Dunes in Winter, by Mrs. E. E. Trumbull. — The strong lines in this picture are the horizontal ones which cross from left to right; a repetition again of simple lines, — the shadows in the snow in the foreground repeated by the ridge or shadow farther beyond, and again by the shrubbery and clouds.

Durham Cathedral, by Wendell G. Corthell. — The reproduction does not do the original full justice. It is full of atmosphere and mystery. The strong lines of the trees in the foreground make an admirable frame-work, showing in the vista the beautiful, majestic church through the haze.

My Sister, by Oscar de Teffé. — This portrait is by an amateur and shows the side lighting which is well suited to the young woman. There is no question here where the interest lies, — the eye at once reaches the features and continues in a pleasing curve to the feather on the hat, to start again in a sort of circular motion back to the face.

Le Printemps, by Katherine Bingham. — The original of this is full of sunshine. It is a very successful rendering of a tree in full blossom against the sky, — one of the most difficult things which an amateur attempts and one which almost every amateur has tried unsuccessfully.

Landscape, by Fedora E. D. Brown. — This, in the opinion of the maker, is a successful attempt at rendering the play of light and shade in the sand dunes, all of the masses being so rendered as to draw the attention to the spot of light on the right side at the foot of the trees. As



LILIES OF THE VALLEY



MISSES W. AND G. PARRISH
BABBIE
NEW YORK SALON

is inevitable in any such attempt, the result is somewhat spotty, but the reproduction does not do justice to the original, which is a fine gum print.

Babbie, by Misses W. and G. Parrish.—This print is good in composition, but would be improved by sharper definition, especially as it is intended as a book illustration.

Historical Photographs. — Historical prints are largely records, and it is not always possible to have them well-balanced or good in composition. We are fortunate in that all three of the prints used this month show excellent arrangement as to line. “Washington’s Headquarters at White Plains” is well placed in the space it occupies. “Battle Lawn” is particularly pleasing, with a soft rendering of lights and shades, and beautiful qualities in the sky and reflections in the water. The “San Luis Rey Mission” is taken from a good point of view and is well composed.

Flower Studies. — These show the application of photography to page illustration and are treated in as simple a manner as possible.

EDITORIAL DEPARTMENT

TRUTH IN PHOTOGRAPHY

The recent establishment in Boston of a pretentious photographic studio, devoted exclusively to commercial photography, is not calculated to advance the high artistic standard which we enjoy, thanks to a group of men imbued with the nobility and dignity of our art. After examining critically the large and brilliant array of portraits of fashionably gowned women displayed in the spacious vestibule of the new studio, we reflected seriously upon the slender encouragement given to art by those who have not only the material means, but culture, taste and refinement. We were mystified in beholding portraits which express absolutely no trace of the fine traits of character, which many of the originals must possess,—faces which are, to all intents and purposes, mere blanks. The bloom of youth is visible on nearly every face, marvelously perfect are the complexions and wonderfully regular the features. Gray-haired women look as youthful as the society buds in the same collection, neither is the difference in age between mother and daughter distinguishable. The photographic elixir of life has been evenly distributed among the numerous representatives of physical perfection. Fortunately for the good sense of the women of Boston, these dazzling portraits represent dames of other communities. But we were concerned principally with the idea of truth in photography. The fact that none of these elegantly finished portraits tells the truth, brings up the question as to what purpose is served by this mode of deception. What satisfaction is enjoyed by a person who distributes among her friends a likeness of herself, which depicts her either twenty years younger than she really is, or as an entirely different person? Surely the recipient of such a counterfeit presentment is endowed with sufficient common sense to appreciate the obvious discrepancy between the picture and the original. One cannot, somehow, repress a feeling of pity for persons who are weak enough to commit the folly of causing to be produced and distributed among their friends photographs of themselves, in which every trace of character and expression has been carefully removed. The photographer simply carries out their wishes. He cares more for pecuniary gain than for a place among men who are honored for legitimate contributions to art. We incline to the opinion that both sides are responsible. The photographer here is a mere artisan. As to the skill and taste he may display in this class of work, he cannot be said to be superior to any of the numerous modest and unknown workmen of Tiffany, the silversmith.

But truth, some one will contend, should be beautiful and not ugly, which remark might, in a way, justify the habit of the commercial photographer of obliterating personal defects. Is not, he argues, "Truth," as interpreted by Lefebvre and Cordonnier at the Luxembourg Museum, the highest and noblest type of female loveliness? Ah, but that superb figure, painted by the French artist, is intended to symbolize great moral principle, and the mirror, which she holds aloft with her right hand, is significant of this idea. The sculptor Cordonnier embodied his conception of fundamental law — truth — in pure, white marble. The truth we are dealing with, although less important, relates to the representation of things or objects as we see them. Photography affords us the means of depicting, with unerring accuracy, scenes in nature, as well as the human face, with their various characteristics of form, structure and expression. Not every photographer, equipped, though he may be, with the most perfect apparatus, is equal to such a task, but it can be done and it is being done. Of Napoleon there exist over one hundred different portraits in varying forms of painting and engraving, and yet no two are alike. Which of them is the most truthful representation of this great man? The responsibility, to secure to mankind and posterity a faithful and characteristic portrait of any great man or woman, devolves as much upon the photographer as upon the painter or sculptor, except that to photography is

conceded an obvious, enviable advantage over the brush and the chisel. How much power, therefore, is within the grasp of the capable and sympathetic photographer disposed to record the truth! To the success of the ideal portrait the sitter can contribute much, viz.: an intelligent and sympathetic cooperation with the artist. However, many a felicitous portrait has been secured without the knowledge of the person to be delineated, the artist often making his sketch surreptitiously. How much more in this respect the photographer can achieve, is well known.

Friends of Franz Liszt are fond of relating the great musician's objection to being portrayed without the numerous, large warts which formed a striking feature of his otherwise handsome face. "Paint every one," he used to say, "I am proud of them all." Among the photographic portraits, which Liszt regarded as among the best ever taken of him, are those by Nadar of Paris. That photographer was strictly enjoined not to meddle with those precious warts. "Without them," remarked the distinguished pianist and composer, "the photographers do not represent me, but some one else, I do not know whom." There are, of course, numerous other instances, where persons of genius, devoid of false pride and senseless material vanity, have frowned upon attempts by artists, whether painters or photographers, to improve upon their actual appearance. As bad drawing, false perspective and other technical defects in painting are not to be tolerated, so should linear exaggeration, false foreshortening and other violations of the principles of design be carefully avoided by the photographer. It is not well to permit the camera to imitate certain daring feats of the painter, whose pencil is a more flexible instrument than the lens. Certain positions of the human body, notably the tilted or inclined attitude of the face, are counted among the most difficult problems presented to the artist and are rarely rendered with success by the camera. A lens of proper construction and suitable focal length, and great skill in distributing the light are prime essentials in producing a madonna *à la* Guido Reni. The lack of sufficient working-room or a lens of inadequate focal length is no excuse whatever, and the perpetrator of a portrait with hands or limbs of abnormal size or with unnaturally protruding features deserves to be soundly rebuked.

All use a lens whose focal length
Shall tally with your mental strength!

Consistency is truly a jewel, and the camerist should know better than to impart to a modest person of private life the attitude and expression of a professional actor, or represent a scrupulously honest man as a swindler. An individual of great intellectual force should be portrayed as such, and not with a stupid, inane expression. A jovial, merry fellow should be depicted with a look of contentment and cheer rather than one of depression and gloom.

Let the photographer become a close observer, more of a student than he has ever been, and, while delighting in the study of the painter's and sculptor's art, let him not neglect the charming, instructive literary productions of Hamerton, Ruskin, Kugler, Van Dyke and other respected authorities on art.

THE PRACTICAL PHOTOGRAPHER

With the March number, entitled "Pictorial Composition," this periodical completes its first year. It is a lusty stripling, and already a vigorous growth has made itself evident. The circulation is rapidly increasing, and the early numbers are nearly out of print. Number 1 is so nearly exhausted that we shall advance the price to 50 cents on April 1, and fill only orders for single copies after that date. We shall not reprint the number, and request our readers who wish to complete their sets to make early application.

The March number is one of the most useful thus far published, and will give valuable instruction to all who desire to make artistic prints. The numbers which we have in preparation for the second volume are to be in no way inferior to those already published. The April number will deal with "Animal Photography" and will cover thoroughly this subject in all its phases. It is an admirable help for the naturalist and all who love life of any kind.

OUR TRIPS TO EUROPE

We want our readers to realize the fact that we have arranged for two skilled photographers and experienced travelers to go to Europe this summer for their especial benefit. We have so arranged the routes of these gentlemen that they will visit the most interesting scenery and places of Europe, and we have thus made it possible for any reader of the PHOTO ERA to see Europe under skilled leadership, with entire avoidance of most of the ordinary hardships of travel, at a very moderate cost. We further offer to purchase photographs made on the trip at a very liberal price, so that a good photographer may be able to earn a fair share of his expenses.

If you have any ambition to visit Europe, this is your opportunity. The details of our business are increasing so rapidly with our growing circulation and our new periodicals, that it is doubtful if our editors will be able to get away another summer. Therefore seize this opportunity and go. Get your friends to go with you, or, if you are married, take your wife. You will come back with more health and more patriotism than you take with you.

COLOR PHOTOGRAPHY

A lively revival of interest in color photography is evident in many quarters, and the air is full of stories of the wonderful results obtained by this or that process, including those of Koenig, Lumière, Szczepanik, Slavik, Miethe, Perscheid, Neuhauss, Worel, South, and others. The Slavik-Multico process, an account of which we gave our readers last September, is about to be placed before the American public, and will doubtless receive its due measure of success. We shall endeavor to keep our readers fully informed of all real advances in this line, as fast as they are made public in practical form.

PHOTOGRAPHIC EXHIBITIONS AND COMPETITIONS

SOCIETY OR TITLE	DATE	ENTRIES CLOSE	INQUIRE OF
Vienna Camera Club	Feb. 15-Mar. 15	Dec. 31	F. Matthies-Masuren, Halle, a. S.
First American (Fifth Chicago) Salon at Chicago	Mar. 2-22	.....	.....
Photographic Society of Ireland	April 3	Mar. 27	R. Benson, 35 Molesworth St., Dublin, Ireland.
International Artistic Exhibition, Berlin	Apr. 7-May 8	.....	Franz Goerke, Maassenstr. 32, Berlin, W. Germany
Providence Camera Club (for members)	Apr. 10-16	Mar. 27	J. B. Whittemore, 152 Weybosset St., Providence, R.I.
Toronto Camera Club Salon	April 11-15	.....	Hugh Neilson, Toronto, Canada.
International Photographic Exhibition, Genoa	Spring, 1905	Mar. 1, 1905	Sig. Gigi Sciuotto, Piazza Fontane Marose, 18, Genoa, Italy.
Ballarat Camera Club	May 9	May 2	G. Montgomery, 201 Sturt St., Ballarat, Victoria.
Photo Club de Paris	May 10-June 19	Mar. 1	Paul Bourgeois, 44 rue des Mathurins, Paris, France.
Northern Photographic Exhibition, Leeds	July 4	.....	F. G. Issott, 62 Compton Rd., Harehills, Leeds, Eng.
Salon and Congress of Photography, Brussels	July-Aug.	.....	M. Vanderkindere, Palais du Midi, Brussels, Belg.
GIVER	CLOSES		PRIZES
Woman's Home Companion	Monthly		\$25, \$10, \$5.
Burr McIntosh Monthly, New York (Outdoor Photographs)	Monthly		\$15, \$10, \$5.
Burr McIntosh Monthly, New York (Freak Pictures)	Monthly		\$10, \$5.
Photogram, Arundel St., Strand, London	Monthly		One guinea and half guinea.
The American Boy, Detroit	Monthly		\$2, \$1.
National Sportsman, Boston	Monthly		\$5, \$3, \$1, \$1.
Browning's Magazine, Boston	Monthly		\$5, \$3, \$2.
The Book-Lover, New York	Monthly		\$5, \$3, \$2, \$1.
American Amateur Photographer	Monthly		\$5.
Western Camera Notes, Minneapolis	Monthly		\$5, \$3, \$2 in goods.
Field and Stream (Sporting and Outdoor Pictures)	Monthly		\$5, \$3, \$2, \$1.
Leslie's Weekly, New York	Weekly		\$10, \$5, \$1.
Buffalo Express	Weekly		\$5 to \$25.
New York Evening Mail	Weekly		\$5.
Commercial Advertiser, New York	Weekly		\$3, \$3, \$2, \$1.
St. Louis Star	Weekly		\$5.
Seattle Post Intelligencer (Western Scenes)	Weekly		\$2.50, \$1.50.

THE ROUND ROBIN GUILD

*Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner.
Membership may be obtained by sending name and address to the PHOTO ERA.*



THEODORE C. WALKER

BATTLE LAWN, CONCORD

"The maiden Spring upon the plain,
Comes in a sunlit fall of rain."

sings the poet, but we, looking out over the snow-clad fields, believe that the poet drew strongly upon his imagination, for does not our

"Maiden Spring upon the hill,
Come in a blast both fierce and chill"?

She whistles her way through the leafless woods and the barren fields so boisterously that we are fain to think her a coworker with winter, rather than a harbinger of summer. Yet, if we wander forth where her feet have trod, we shall find the arbutus with the flush like the early sunrise on its petals, already setting its starry blossoms along its rough stems. Even the crocuses are blinking their eyes, and as soon as their snow blanket is thrown off will surprise us by popping up and making their very prettiest spring bows.

Yes, the time of the singing of birds will soon be here, and amateurs whose cameras have lain idle during the winter are already planning pleasant wanderings with these cheerful companions.

As we turn our faces summer-ward, should we not give one backward glance to see if there is not something left undone which we surely meant to accomplish while winter held sway?

How about the negatives which we were going to sort, and catalogue, and file? Are the films which we stored in books, planning to put them

in convenient shape for use, still waiting our tardy attention? If so, why not utilize some of these stormy March days or evenings in getting our old material in order before we add to our photographic burdens by bringing in more?

The manner in which I store my films may be of interest, and better still, of help to the amateur who is wrestling with the problem of how to so arrange his films that he may find any special negative when needed. The way in which I file and store my films makes it possible to find any negative with very little trouble and put it away again with less. Listen!

CASES FOR STORING AND FILING FILMS

WHILE films are in many ways more convenient than plates, especially for traveling and camera sketching excursions, they have one drawback, — they are not so conveniently filed or sorted. A glass negative is slipped into a manilla envelope, numbered, labeled, and placed in a pigeon-hole or a box, but the flexible nature of the film makes it necessary that the receptacle for it must be of a heavier nature than the manilla paper used for the glass.

There are a large number of articles on the market for storing and filing films, but having tried many I have gone back to the little device invented by myself, finding it at once the handiest and simplest of any I have ever used.

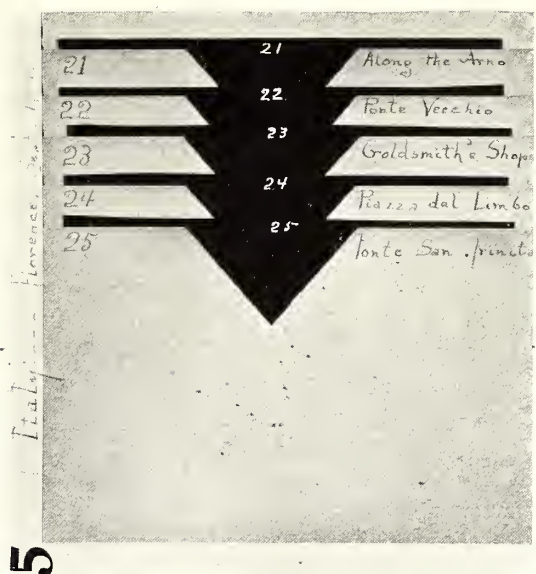
The material is manilla tag board, a trifle heavier than postal card stock, and the cost for one hundred cases will not exceed seventy-five cents. Each case holds five films, thus making a storing capacity for five hundred films at a nominal cost.

The boards are cut in six sizes,—the price named including the cutting. The largest size is $6 \times 6\frac{1}{2}$; the next size, 6×6 ; the next $6 \times 5\frac{1}{2}$; the next 6×5 ; the next $6 \times 4\frac{1}{2}$, and the last 6×4 . The six pieces make one case and are arranged in graduating sizes, the left-hand side and bottom of the case being bound with passe-partout binding, and a triangle cut in the center of each card for convenience in slipping the films in and out. The illustration shows the completed case filled with films.

One accomplishes a great deal more by working in a systematic manner, and moreover the hand acquires deftness by doing the same thing over and over, and there is a certain routine in the making of these cases which not only simplifies the work, but hastens it very materially.

First cut the passe-partout binding into strips, half being $6\frac{1}{2}$ inches in length, and half 6 inches in length. Fold these lengthwise through the middle, the gummed side in, keeping the two sizes separate. Next, arrange the cards in piles, each size by itself, and place them in rows, beginning with the smallest and ending with the largest. Now take up one of the largest size, then the next, and so on until you have one of each size. Lay the pile on the table and make up another set, laying it on the first with the cards in the opposite direction. Separate all the cards into sets in this manner, laying them in alternate directions to facilitate picking them up for binding.

Take up a set of the cards, tap lightly on the table to get the edge even, and clasp a paper clip over the right-hand edge. The next step is the cutting out of the triangles, the one on the smallest card being cut first and the succeeding ones in order, the first cut serving as a guide to all the rest. One of the longer strips of binding is moistened, using a soft brush and wetting the paper by one sweep of the brush from top to bottom of the strip. The widest part is on the face of the case, so lay the binding with the fold coming to the edge of the upper cards, rub it down, and turn the rest of the strip over on the reverse side. Gum the second strip and apply to the bottom cards in like manner. The cases are now ready for filling, numbering, and lettering. At the left of the triangles write on the free space of the cards the number of the negative which it covers, and on the left-hand side its name. On the binding at the left may be written the general title of the collection. If, for instance, they are foreign views, write the name of the country,—as Italy, France, etc. The cases themselves are numbered 1, 2, 3, 4, etc., and the negatives have their numbers in white ink on the margin of the film. It will thus be seen



that the negatives go in series of fives, one of the easiest ways of numbering.

The indexing is as simple as the cases. The number of the case is written in the book and below it the numbers and titles of the negatives which it contains. Thus, Number of case, 5. General title, Italy. Sub-title, Florence. Numbers of negatives with titles:—

- No. 21. Along the Arno.
- No. 22. Ponte Vecchio.
- No. 23. Goldsmiths' Shops.
- No. 24. Piazza del Limbo.
- No. 25. Ponte San Trinita.

It is a very easy matter to "locate" any negative when they are marked and indexed in this manner. The cases are set on the free or open end, when they are in this position the binding at the front and top protecting films from dust. They are slipped either into pigeon-holes,—much the more convenient way—or into boxes. If one uses the white passe-partout binding, the number of the case may be marked on the edge in small figures; and if not, it is easy to count the numbers, for of course one would not store more than twenty in a pigeon-hole or box, and the receptacle would bear on the edge the numbers which it contained.

One may make a hundred of these cases in an evening; and once used, they will be acknowledged as at once the simplest, cheapest, and handiest of all film cases.

YESTERDAY AND TO-DAY

It all happened in a long ago yesterday, yet the tale, borne "on the night-winds of the Past" to us of to-day, seems as fresh and as vivid as though brave Paul Revere and all his compatriots had not been dust this many a year.



FRED. FARRINGTON

WASHINGTON'S HEADQUARTERS

"Hushed are their battle-fields, ended their marches,
Deaf are their ears to the drum-beat of morn,"

and the lichens are covering the stones that mark their last resting-places, stealing even their names away.

But they, the foundation layers of our nation, were the builders whose work is immortal. The great and noble structure which they bequeathed to us can never be taken from us. It is ours to enjoy, ours to leave unimpaired to our children. And how can we enhance this legacy? By preserving as far as possible the relics of those stirring times of the birth of the nation. Many, alas! have perished miserably, either through neglect or through vandalism, or through the mania for "improvement."

The present generation has, however, become aroused to the fact that three or four more decades of neglect will destroy even the few historical relics remaining to us, and is taking active measures to preserve as many as are left, and where every trace is gone is erecting tablets to mark the historic spots.

The National Historic Picture Guild in its work goes a step farther. It aims to preserve photographically all existing relics of historical interest. It is no small task which it has set for itself.

"To plant a colonie," writes that old Virginian colonist, Captain John Smith, "it requires all best parts of art, courage, judgment, honesty, constancy, diligence, and industry, to do neere well."

Now, to plant an Historic Picture Guild the same requisites are needed, if we wish to do "neere well." In addition it needs a spirit of patriotism such as animated Paul Revere when he rode forth into the night to spread the message for which the minute-men were waiting.

The Guild is established. The Smithsonian Institution has approved of the enterprise and has

promised to take the collection into its custody. This means that the Guild will be among the national institutions. The work cannot be done in a day, a week, a year. The Guild has set itself three years in which to get together a goodly collection in suitable shape for deposit at Washington with Mr. Langley, the Curator of the Smithsonian.

It is a laborious undertaking, but the promoters of the work are not easily disheartened, and are not appalled at the vastness of the object. The endowment fund will make it possible to greatly accelerate the labors, and to take care of the pictures which have already been generously donated.

The work of collecting the pictures devolves on the amateurs. Do you not want some part and lot in this great matter? Do you not want to be connected with this important part of the nation's records? Come, then. Contribute your quota of the "art, courage, judgment, honesty, constancy, diligence, and industry" required to make the Guild do "neere well." Do it for the love of country, for the sake of preserving to future generations these priceless legacies before they slip forever from our grasp.

Help us to bind the ages that are past with all the ages that are to be.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITION

SUBJECT for the March Competition, "Still Life." Closes April 30.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: \$5.00 in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the *PHOTO ERA* or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

SUBJECTS FOR COMPETITION

February. — "Snow Scenes." Closes March 31.

March. — "Still Life." Closes April 30.

April. — "Cloud Study." Closes May 31.

May. — "Animal Study." Closes June 30.

June. — "A Country Road." Closes July 31.

Special Competition. — "Old Acquaintances." From five to ten character studies, preferably illustrating the inhabitants of "Our Village," mounted on a folder which closes like a book. Closes March 31, 1905. Prizes \$10.00 and \$5.00, awarded only to satisfactory collections. An article suggesting treatment of subject will be found in the October, 1904, number of the *PHOTO ERA*.

AWARDS

ONLY three of the historical pictures received in the competition on this subject have been deemed worthy of award, and they are reproduced in this number.

First prize: Battle Lawn, Concord, Mass., by Theodore C. Walker.

Second prize: Washington's Headquarters, White Plains, N. Y., by Fred Farrington.

Third prize: San Luis Rey Mission, California, by Laurence Macomber.

ANSWERS TO CORRESPONDENTS

O. A. WARNER. — Cards of membership and circulars for the Round Robin Guild have been sent to you. We should be glad to have you send some California views as you suggest. Your camera is an excellent one.

N. L. BAILEY. — The subject you suggest would be a desirable one for the Historic Collection, and we should be glad to receive a copy. Please give full details of the subject.

D. P. WILLIAMS. — In making self-toning platinum prints do not touch the surface of the prints with the fingers. Handle by extreme edges. Spots on the prints may be removed by brushing lightly with a diluted solution of acetic acid.

R. HENRY. — Hydrochinon may be used for gas-light papers, but gives harsher tones than the developer put up for the special brand of paper you are using. The uneven printing is doubtless due to the light striking the plate unevenly. Hold at about 12 inches from the light; and if the plate is a large one, it should be removed still farther. Keep the frame moving slightly during the printing process. Use acid hypo for fixing and you will avoid spotted prints.

G. R. THOMAS. — We prefer not to publish any formula for flash-light powders. The danger of accidents from the explosive quality of the materials makes it dangerous for one to handle them, and the powders being so cheap it is not worth while for one to run the risk of serious injury, through the compounding of flash-light powders or cartridges.

NELLIE F. O. — A redeveloping solution may be made of pyro gallic acid as follows: Pyro, 3 grains; water, 4 oz.; 20-grain solution of nitrate of silver, 30 drops. Soak the negative until the film is well moistened, then place in the developer and rock the tray occasionally until the required density is obtained. Wash well and dry. If not dense enough, repeat the process. The silver in the solution is deposited on the plate and helps to intensify the negative.

H. P. C. — Mounts such as are used in the *édition de luxe* of the PHOTO ERA may be obtained by sending direct to the PHOTO ERA. A stamp



LAURENCE MACOMBER

SAN LUIS REY MISSION

will bring you samples of both domestic and imported papers, with prices of same.

D. D. W. — Use non-halation plates for out-of-door photography at night. The exposure must be doubled, but there is little danger of overexposure. On a snowy night, or a night when the pavements are wet, an exposure of one minute will be sufficient, provided, of course, the street is well lighted. If the lights are gas, the exposure must be prolonged to five or ten minutes.

A. HART. — The angle of a lens is the number of degrees included in the view, which with the ordinary lens is about sixty. If eighty or more degrees are included, the lens is called a "wide-angle" lens. A wide-angle lens is useful where the space is contracted,—for instance, in the making of interiors. A wide-angle lens has a short focus, and in order to have the image clearly defined the stops must be smaller than those used with the ordinary lens.

M. B. DENTON. — To remove prints from the mounts, throw them into a dish of lukewarm water and let them remain until the mount is softened, when the print is easily separated from the mount. While still wet, lay the print face down on a sheet of glass and wash off the paste which adheres to the back, with a soft sponge. The prints are then carefully dried on a flat, smooth surface, and may be remounted. Great care is necessary in the case of old photographs not to tear the print, the paper being much thinner and more tender than the paper used at the present day.

THE PHOTO ERA EUROPEAN TOURS, 1905

We reprint on the following page the itineraries of a portion of the options which our photographic tours afford for the coming season. We are not able, owing to lack of space, to publish all of them this month, but will be pleased to give full information to any interested reader.

It will be remembered that last year we offered a prize of the cost of the trip to the member making the best set of pictures. This had the disadvantage that there was no way of rewarding adequately the good prints in the unsuccessful sets. This year we shall offer to purchase the forty best prints submitted at \$10 apiece. The conditions are the same as last year, that the prints, mounted and marked with a device or motto, shall be delivered at our office before Dec. 1, 1905, accompanied by the negatives. We shall have the right to make any use desired of the prints purchased, or their negatives. All unsuccessful prints, and all negatives will be returned to the owners on or before March 1, 1906. If less than twenty persons make the trip, the number of prints purchased may, at the discretion of the PHOTO ERA, be proportionally reduced.

The prices which we name for our trips may appear higher than those advertised by other conductors. Upon careful comparison of our prices and what we furnish with other published offerings, any experienced traveler will quickly recognize that our tours are really the cheapest. We pay every calculable expense of travel from start to finish except laundry, baths, and beverages ordered by the traveler. These purely personal expenses cannot be assumed by any management, as they are entirely dependent on personal taste. We do pay all tips and fees of every kind, including the vexatious fees and charges for deck chairs on the Atlantic steamers. We also furnish three meals a day, in accordance with the custom of the country in which we may be stopping. Most conductors allow travelers to pay their own tips, and do not furnish a noon meal, on the ground that galleries and places of attraction are often not convenient to the hotel. The real reason is that by so doing, the tour can be advertised at a much lower rate. These expenses are usually estimated by the conductors themselves at a dollar or two a day, and they are as likely to be more as they are to be less. We believe that we can best serve our patrons' interest as well as our own by making our prices inclusive of every legitimate expense. We can tip the servants of a hotel and provide meals for twenty people at least as well and cheaply as they can do it individually, and in practice we save our patrons at least twenty-five per cent of these charges by taking care of them in a lump. A waiter, for instance, is far better satisfied to be certain of 10 francs from a conductor, than to depend for 20 francs on the generosity or parsimony

of twenty travelers who are unused to the universal European habit of tipping, and disposed to resent it or feel imposed upon by the custom. The total necessary expenses for a trip of ninety days under our auspices may be estimated at about \$25 or \$30 beside the cost of the trip, although by care this may be brought down still lower. This does not include photographic materials or souvenirs.

One or two prospective travelers have inquired about the assignments of steamer berths. We cannot assign berths until just before sailing, because we are likely to get better berths at a late date than the minimum rate berths which are assigned us on early application. The only assurance we can make is that those applying earliest will be given the preference in the assignment of berths. Membership is secured by payment of \$50, the balance to be paid three weeks before sailing. If for any reason the member is unable to go, the entire amount paid will be refunded at any time before the date of sailing. There is therefore no risk run by enrolling early, and it is only in this way that preference in assignments can be secured. Another argument for early joining is that the party will be absolutely limited to twenty, as no conductor can take care of a larger party successfully.

These trips offer unrivaled opportunity for pictorialists to secure fine pictures. We see some of the most magnificent scenery of the world, and the opportunities for landscape photography are unlimited. We are continually in the presence of ancient civilizations, which have everywhere left ineffaceable memorials of the highest picturesqueness. We are ever in contact with people who in costume and customs are so different from us that they always appeal to us as pictorial material. We shall see day by day the greatest achievements of the human intellect in the domains of painting, sculpture, and architecture, and will thereby be instructed and inspired for artistic attainment ourselves.

But photography is not all we go to Europe for. We can see grand scenery and strange people in our own country, but the only place to travel for mental broadening and uplifting is Europe. "The proper study of mankind is man," and Europe has been the scene of the great achievements of humanity for more than two thousand years. No sane and intelligent man can see Europe and compare the lives and activities of its people with our own without returning a better American, and thanking his stars that he was born an American. We offer the benefits of our party to every reader and his friends, and will give all who go with us advantages which they can enjoy under no other auspices. If you are thinking of Europe, or have any friends who are, let us know, and we will do our best for you.

THE PHOTO ERA EUROPEAN TOURS, 1905

Sundays in Italics.	Tour A. 67 Days, \$535.	Tour B. 74 Days, \$590.	Tour C. 85 Days, \$680.	Tour I. 81 Days, \$645.	Tour J. 87 Days, \$690.	Tour L. 74 Days, \$590.
June 17	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....
June 27	Antwerp.....	Antwerp.....	Paris.....	Antwerp.....	Antwerp.....	Antwerp.....
June 28	Ghent.....	Ghent.....	Paris.....	Ghent.....	Ghent.....	Ghent.....
June 29	Bruges.....	Bruges.....	Paris.....	Bruges.....	Bruges.....	Bruges.....
June 30	Brussels.....	Brussels.....	Paris.....	Brussels.....	Brussels.....	Brussels.....
July 1	Louvain.....	Louvain.....	Paris.....	Louvain.....	Louvain.....	Louvain.....
July 2	Cologne.....	Cologne.....	Paris.....	Cologne.....	Cologne.....	Cologne.....
July 3	The Rhine.....	The Rhine.....	Paris.....	The Rhine.....	The Rhine.....	The Rhine.....
July 4	The Rhine.....	The Rhine.....	Paris.....	The Rhine.....	The Rhine.....	The Rhine.....
July 5	Heidelberg.....	Heidelberg.....	Paris.....	Heidelberg.....	Heidelberg.....	Heidelberg.....
July 6	Lucerne.....	Lucerne.....	To Lucerne.....	Lucerne.....	Lucerne.....	Lucerne.....
July 7	Interlaken.....	Interlaken.....	Lucerne, Interlaken.....	Interlaken.....	Interlaken.....	Interlaken.....
July 8	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....
July 9	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....
July 10	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....
July 11	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....
July 12	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....
July 13	Lake Como.....	Lake Como.....	Lake Como.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....
July 14	Milan.....	Milan.....	Milan.....	Lake Como.....	Lake Como.....	Lake Como.....
July 15	Milan.....	Milan.....	Milan.....	Bergamo.....	Bergamo.....	Bergamo.....
July 16	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 17	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 18	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 19	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....
July 20	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....
July 21	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....
July 22	Florence.....	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....
July 23	Florence.....	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....
July 24	Florence.....	Florence.....	Florence.....	St. Gothard Pass.....	St. Gothard Pass.....	St. Gothard Pass.....
July 25	Florence.....	Florence.....	Florence.....	Furka Pass.....	Furka Pass.....	Furka Pass.....
July 26	Assisi.....	Assisi.....	Assisi.....	Tête Noire.....	Tête Noire.....	Tête Noire.....
July 27	Perugia.....	Perugia.....	Perugia.....	To Chamonix.....	To Chamonix.....	To Chamonix.....
July 28	Orvieto.....	Orvieto.....	Orvieto.....	Chamonix.....	Chamonix.....	Chamonix.....
July 29	Rome.....	Rome.....	Rome.....	Chamonix.....	Chamonix.....	Chamonix.....
July 30	Rome.....	Rome.....	Rome.....	Geneva.....	Geneva.....	Geneva.....
July 31	Rome.....	Rome.....	Rome.....	To Turin.....	To Turin.....	To Turin.....
Aug. 1	Rome.....	Rome.....	Rome.....	Turin.....	Turin.....	Turin.....
Aug. 2	Rome.....	Rome.....	Rome.....	Genoa.....	Genoa.....	Genoa.....
Aug. 3	Tivoli.....	Tivoli.....	Tivoli.....	Pisa.....	Pisa.....	Pisa.....
Aug. 4	Albano, Nemi.....	Albano, Nemi.....	Albano, Nemi.....	The Eastern Riviera.....	The Eastern Riviera.....	Rome.....
Aug. 5	To Naples and Capri.....	To Naples and Capri.....	Rome.....	The Western Riviera.....	The Western Riviera.....	To Capri, Capri.....
Aug. 6	Capri.....	Capri.....	Anzio.....	Monaco, Monte Carlo.....	Monaco, Monte Carlo.....	Sorrento.....
Aug. 7	Sorrento.....	Sorrento.....	Pompeii, Capri.....	The Corniche Drive.....	The Corniche Drive.....	Amalfi, Salerno.....
Aug. 8	Amalfi, Salerno.....	Amalfi, Salerno.....	Taormina.....	Marseilles.....	Marseilles.....	Pompeii.....
Aug. 9	Pompeii.....	Pompeii.....	En route to.....	Arles, Nîmes.....	Arles, Nîmes.....	Naples.....
Aug. 10	Naples.....	Naples.....	Olympia.....	Pont du Gard.....	Pont du Gard.....	Naples.....
Aug. 11	Naples (sail).....	Naples.....	Delphi.....	Carcassonne.....	Carcassonne.....	Palermo, Monreale.....
Aug. 12	Due in N. Y. Aug. 23.....	Palermo, Monreale.....	Corinth.....	Lourdes.....	Lourdes.....	Palermo.....
Aug. 13	Palermo.....	Palermo.....	Athens.....	Gavernie.....	Gavernie.....	Palermo, Cefalu.....
Aug. 14	Palermo, Cefalu.....	Athens.....	Athens.....	Pau.....	Pau.....	Selinunto, Girgenti.....
Aug. 15	Selinunto, Girgenti.....	Athens.....	Athens.....	Angoulême.....	Angoulême.....	Syracuse.....
Aug. 16	Syracuse.....	Athens.....	Athens.....	Tours.....	Tours.....	Taormina.....
Aug. 17	Taormina.....	Athens.....	Athens.....	Loches.....	Loches.....	Naples (sail).....
Aug. 18	Naples (sail).....	Athens.....	Athens.....	Amboise, Blois.....	Amboise, Blois.....	Due in N. Y. Aug. 30.....
Aug. 19	Due in N. Y. Aug. 30.....	Athens.....	Athens.....	Chartres.....	Chartres.....	
Aug. 20		Athens.....	Athens.....	Paris.....	Paris.....	
Aug. 21		Epidaureus.....	Paris.....	Paris.....	Paris.....	
Aug. 22		Mycenae, Tiryns.....	Paris.....	Paris.....	Paris.....	
Aug. 23		Cnossus in Crete.....	Paris.....	Paris.....	Paris.....	
Aug. 24		Patmos, Samos.....	Paris.....	Paris.....	Paris.....	
Aug. 25		Delos, Andros.....	Rouen.....	Rouen.....	Rouen.....	
Aug. 26		Salamis, Eleusis.....	Caen.....	Caen.....	Caen.....	
Aug. 27		Corfu.....	Cherbourg (sail).....	London.....	London.....	
Aug. 28		Brindisi.....	Due in N. Y. Sept. 6.....	London.....	London.....	
Aug. 29		Naples (sail).....		London.....	London.....	
Aug. 30		Due in N. Y. Sept. 10.....		London.....	London.....	
Aug. 31				London.....	London.....	
Sept. 1				London.....	London.....	
Sept. 2				London.....	Due in N. Y. Sept. 12.....	

NOTES AND NEWS

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC AND PHOTOGRAPHER'S DAILY COMPANION. 1905. Edited by Thomas Bedding, F.R.P.S. London, Henry Greenwood & Co. New York, G. Gennert.

Bulkier than ever before, this admirable collection of practical articles and still more practical advertisements comes once more to our desk. As we place it among its portly companions and predecessors, the shelf groans, and we call the janitor to shore up the bookcase, and wonder what we shall do when the next one comes. Seriously, the book is a valuable addition to any photographer's library. It contains a wealth of practical articles, and a mass of tables and formulas which have long been regarded as standard. The book may be had from any stock dealer in the United States.

PHOTOGRAMS OF THE YEAR 1904. London, Dawbarn & Ward. New York, Tennant & Ward.

This annual fills a place which no other book in English does, in giving a review of the principal fields of artistic photographic endeavor of the year, and a magnificent choice of pictures from all schools and countries, fully representing the best work of the year of all schools. The aim of the editors is each year to bring some new group of earnest workers into the field of international knowledge, and they reach out into all the far corners of the earth in this endeavor. The quality of the reproductions is very high, and the book is a most valuable companion for the serious student of photographic art.

DIE PHOTOGRAPHISCHE KUNST IM JAHRE 1904. Dritter Jahrgang. Herausgegeben von F. Matthies-Masuren. Verlag von Wilhelm Knapp, Halle a. S.

Surpassing in size of page, quality of reproductions, and excellence of typography any year book published, this is the *ne plus ultra* of photographic annuals. The publishers and editors seem to be able to command any picture which they desire, and there is no school or prominent group of workers in Europe which is not represented by the best and newest work of its most talented workers. This book contains the most representative collection of artistic photography that we have yet seen, and is well worth the price of 8 marks, even though the text is in German.

DIE BILDMÄSSIGE PHOTOGRAPHIE. Erstes Heft, 1904. Landschaften. Wilhelm Knapp, Halle a. S.

This is essentially the same work as "Fotografie als Kunst," previously reviewed by us, save that the text is in German instead of in Dutch. It is the first number of a quarterly periodical. The

second number, soon to be issued, will be devoted to portrait photography, and will contain the work of some of the best European and American photographers. Single copies cost 5.50 marks, and the yearly subscription is 16 marks.

THE Lens and Brush Club of Boston will hold a loan exhibition of the finest portrait and landscape photography obtainable, extending from April 24 to May 20. It is the purpose of the committee to conduct this exhibition on similar lines to the annual exhibition of the Royal Photographic Society of London. Already many of the leading professional and amateur workers of the country have promised their support, and everything now indicates an exhibition of exceptional artistic excellence. The committee in charge of this exhibition is composed of Morris Burke Parkinson, chairman, Charles W. Hearn, secretary, J. H. Garo, E. L. Byrd, James Stuart Campton, and Day Baker.

Professional and amateur workers who desire to exhibit can obtain all information by addressing the secretary of the committee, Charles W. Hearn, 394 Boylston Street, Boston.

HINTS ON THE USE OF THE ROYLE LINING BEVELER. John Royle & Sons, Paterson, N. J.

This is another of the pleasing little books issued by this firm to explain the principles and methods of operation of their machines. It is attractively printed and illustrated with specimens of the work done by the machine. It will be sent free on request to any one interested in photo-engraving machinery, as will any other literature published by the firm.

THE teaching of photography by means of mail criticism seems to be on the increase. This affords a simple and scientific method whereby those living in small places can receive instruction as good as that obtainable by those who live in the metropolis. Milton Waide has formed a correspondence school for the teaching of his "One Man Method," and offers to every one interested in photography, be he professional, amateur, or beginner, a free prospectus for a postal. If you are interested in improving your work, and want sound and helpful constructive criticism, write for the prospectus. If you are a professional, and find it hard to make both ends meet, write and find out about the "One Man Method."

THE Boston Camera Club will exhibit a fifty-frame exhibition from the American Federation of Photographic Societies at its rooms at 50 Bromfield Street, Boston, Mass., from March 1 to 11 inclusive, and an exchange exhibition from the Portland Camera Club from March 15 to 25 inclusive. Both exhibitions will be open to the public.

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Contributions relating to photography in any and all of its branches will receive our careful consideration. While not accepting responsibility for unsolicited contributions, we will endeavor to return them if not available, provided return postage is enclosed.

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EDWIN KELLER
"FULL MANY A FLOWER IS BORN TO BLUSH UNSEEN"
BUFFALO CAMERA CLUB EXHIBITION



PHOTO ERA

The American Journal of Photography

VOL. XIV

APRIL, 1905

NUMBER 4

HISTORICAL RECORD WORK

PAUL REVERE'S RIDE

THOMAS HARRISON CUMMINGS

Do you know who was the man who laid the cornerstone of Boston State House? He was one of the prime movers of the "Tea-party" that destroyed the tea in Boston Harbor in November, 1774. He was one of the thirty "North End" young men who formed a secret society directly afterward, and patrolled the streets of Boston for the purpose of noting the movements of the English troops and detecting the designs of the Tories. He was the young patriot who one hundred and thirty years ago, come April nineteenth, carried that fate-ful and memorable message from Boston through every Middlesex village and farm, and aroused the men who the next morning struck the first blow for liberty. He is the man whose name shall gleam forever like a jewel amid Longfellow's exquisite word setting.

Paul Revere! Ah, the most sluggish blood must stir when that name is heard and the picture of Paul Revere's ride rises before the mental vision. It is at once one of the most simple and most dramatic incidents of the Revolution. Said Paul Revere to his trusty friend:—

"If the British march
By the land or sea from the town to-night,
Hang a lantern aloft in the belfry arch
Of the North Church tower as a signal light,—
One, if by land, and two, if by sea;
And I on the opposite shore will be,
Ready to ride and spread the alarm."

With a fervent hand clasp, and a "God speed!" the two parted,— Paul Revere to row silently across to Charlestown shore, under the very prow of the British man-of-war, the "Somerset,"—

"A phantom ship, with each mast and spar
Across the moon like a prison bar,"

while his friend loitered and lingered about the streets, listening and watching till at last he heard



WILFRED A. FRENCH
CHRIST CHURCH TOWER



WILFRED A. FRENCH

INTERIOR OF CHRIST CHURCH

"The measured tread of the grenadiers,
Marching down to their boats on the shore."

There is no loitering then. Swiftly he speeds
away to the signal post.

"He climbed the tower of the old North Church,
By the wooden stairs, with stealthy tread,
To the belfry chamber overhead,— . . .
By the trembling ladder, steep and tall,
To the highest window in the wall."

What strange, tumultuous feelings must
have moved him as he paused

"To listen and look down
A moment on the roofs of the town.

"Beneath in the churchyard lay the dead,
In their night-encampment on the hill,
Wrapped in silence so deep and still
That he could hear, like a sentinel's tread,
The watchful night-wind, as it went
Creeping along from tent to tent,
And seeming to whisper 'All is well!'
A moment only he feels the spell

Of the place and the hour, and the secret dread
Of the lonely belfry and the dead;
For suddenly all this thoughts are bent
On a shadowy something far away,—
A line of black that bends and floats
On the rising tide, like a bridge of boats."

On the opposite shore Paul Revere, booted
and spurred for his midnight ride, paced to
and fro, and watched with eager search, —

"The belfry tower of the old North Church,
As it rose above the graves on the hill,
Lonely and spectral, and somber and still:
And lo! as he looks, on the belfry's height
A glimmer, and then a gleam of light!
He springs to the saddle, the bridle he turns,
But lingers, and gazes, till full on his sight
A second lamp in the belfry burns."

And now what happens? Why nothing
but —

"A hurry of hoofs in a village street,
A shape in the moonlight, a bulk in the dark,



WILFRED A. FRENCH
PAUL REVERE HOUSE

And beneath, from the pebbles, in passing, a
spark
Struck out by a steed flying fearless and fleet;
That was all! and yet through the gloom and
the light
The fate of a nation was riding that night."

Listen! Do you not in fancy hear the
hurrying hoofs of that gallant steed as they
fall, "now soft on the sand, and loud on the
ledge"?

"So through the night rode Raul Revere,
And so through the night went his cry of alarm
To every Middlesex village and farm, —
A cry of defiance, and not of fear,
A voice in the darkness, a knock at the door,
And a word that shall echo forevermore!
For, borne on the nightwind of the Past
Through all our history to the last,
In the hour of darkness and peril and need,
The people will waken and listen to hear
The hurrying hoof-beats of that steed,
And the midnight message of Paul Revere."

Such is the story as told by the poet Long-
fellow in his celebrated poem, "The Midnight

Ride of Paul Revere," written over forty
years ago. Meanwhile the hand of time has
since ruthlessly been at work and changes
have taken place. Many of the landmarks
connecting us with Paul Revere's time and his
famous achievement have been obliterated.
But, as showing the value of photography as
applied to the preservation of historical rec-
ords, we have reproduced in this issue some
photographs recently deposited in our archives
by Mr. Wilfred A. French, a member of the
National Historic Picture Guild. They illus-
trate all that now remains of that first overt
act of the Revolution that led to the freedom
and independence of the colonies.

Perhaps the most interesting is the birth-
place of Paul Revere, Nos. 19 and 21 North
Square, Boston. It stands, as the picture
shows, surrounded by houses of more recent
date, and is a quaint example of prerevolu-
tionary architecture with a projecting second
story. In its upper windows were displayed
on the night of the first anniversary of the



WILFRED A. FRENCH
ROBERT NEWMAN HOUSE

Boston Massacre illuminated pictures with allegorical designs of the tragic event which the historian says "struck the spectators with solemn silence."

The oldest church building in Boston is Christ Church, built in 1723. It adjoins the famous Copp's Hill Burying Ground, which dates from 1660. The church tower is, perhaps, the most interesting point to us, as it was in this tower the lanterns were hung on the eventful night. The present steeple is not the original one, which was blown down in a gale in 1804, but is an exact replica of the original made by the architect Bulfinch. The interior, as the picture shows, contains the ancient decorations and appointments which have remained practically unchanged to our day. The old-fashioned straight-back pews, the deep win-

dow seats, the mural ornaments are there still as they were in the days of Paul Revere. Some confusion exists regarding the identity of this church as the old North Church of Paul Revere fame. Though named Christ Church, it was popularly known as the North Church in Revolutionary days, and it was the sexton of this church, Robert Newman, who received the signal and actually hung the lanterns in the church tower. His house, built in 1722, was still standing up to within a very short time, when the onward march of events forced it to give way to a more modern structure.

The route taken by Paul Revere was along the old Medford road, and one of the first houses he reached in Medford was the Porter House, built in 1725, a picture of which is



WILFRED A. FRENCH

THE PORTER HOUSE, MEDFORD

given herewith. After arousing the inmates, he pushed forward to Lexington, where he drew up his horse in front of the Hancock-Clarke house, near Lexington Common, where the minute men made their first stand before the British Regulars. Here John Hancock and Samuel Adams were sleeping. They had just time to reach a hill in the rear of the house when the firing began, and Mr. Adams exclaimed to Hancock: "What a glorious morning for America!" The Lexington Historical Society has recently purchased this house, and has set about preserving it. Mr. French's picture will preserve it for historical record purposes for all time. The value of this kind of work which Mr. French has done in these photographs is practically without price for the future historian. No pen picture, however eloquently drawn, can ever equal a photograph for accuracy and detail of statement. Its general adoption throughout the country would revolutionize historical methods and lead the way to a better preservation of historical data for the future.

It is this kind of service that the National Historic Picture Guild is seeking to organize

throughout the United States. In every locality there is some spot or some building connected with its early history, the memory of which deserves to be kept alive, yet is fast disappearing. How to preserve it for posterity is the problem. And the "art that secureth the shadow ere the substance vanisheth" is, we submit, the best solution thus far offered for the problem. Public-spirited citizens everywhere should contribute to this work, amateur and professional photographers alike. The Smithsonian Institute at Washington has become the national depository of our picture archives, and any one may become a member of the Guild by sending in his name and address to us, and contributing a picture of historical value to the collection. The Charter list of five hundred names is rapidly approaching completion, but there is still a chance left for you, dear reader, to have your name inscribed upon the roll of honor. When the great roster is complete, we shall perfect and systematize the work of embodying in permanent photographic form scenes and places worthy to be commemorated in our country's history.



WILFRED A. FRENCH

THE CLARKE HOUSE, LEXINGTON

ONE MORNING

A TRAMP A-FIELD—AND SOME OBSERVATIONS AS TO THE RELATION OF WEATHER AND SUBJECT

W. P. HOPKINS

Going foraging for pictures, are you? Don't think much of the day? Why, it's just right for lots of subjects. Weather make any *difference*? Well, I should say so. Hazy light like to-day won't do at all for some kinds of views. Of course, if you're going on a "plate-wasting expedition," you don't mind. In that case you might as well shoot them off in the back yard and then you can take a walk without the trouble of carrying the camera and tripod.

Joking aside, did it ever occur to you that the average amateur (who's an odd sort of creature in more ways than one) generally goes out about as ill-prepared for success as though he took pains to do the wrong thing and to choose the wrong subject?

It's really so. The thought that all subjects do not appear to equal advantage in the same light has probably occurred to him; but he waves it aside and proceeds to make seashore exposures at high noon on cloudless days, and selects dull, cloudy days for his tree-dotted landscapes.

Let's reason it out—while you're getting the camera ready. I'll warrant the time will be well spent, for economy in plates will be the result. Where shall we go? Why, you've been wanting for some time to get to Smith's Pond over on the north side of town, where Miss Denison got such fine views. To-day's hazy sun will help you, because it will probably be dull and bright by turns and you can choose your time.

Ready? Yes, but suppose we first pose your pointer dog against his dog-house and with the fruit-trees in the garden as background. Give him a bone and he'll lie down and keep quiet long enough. Just enough shadow to make good contrasts without overdoing the thing.



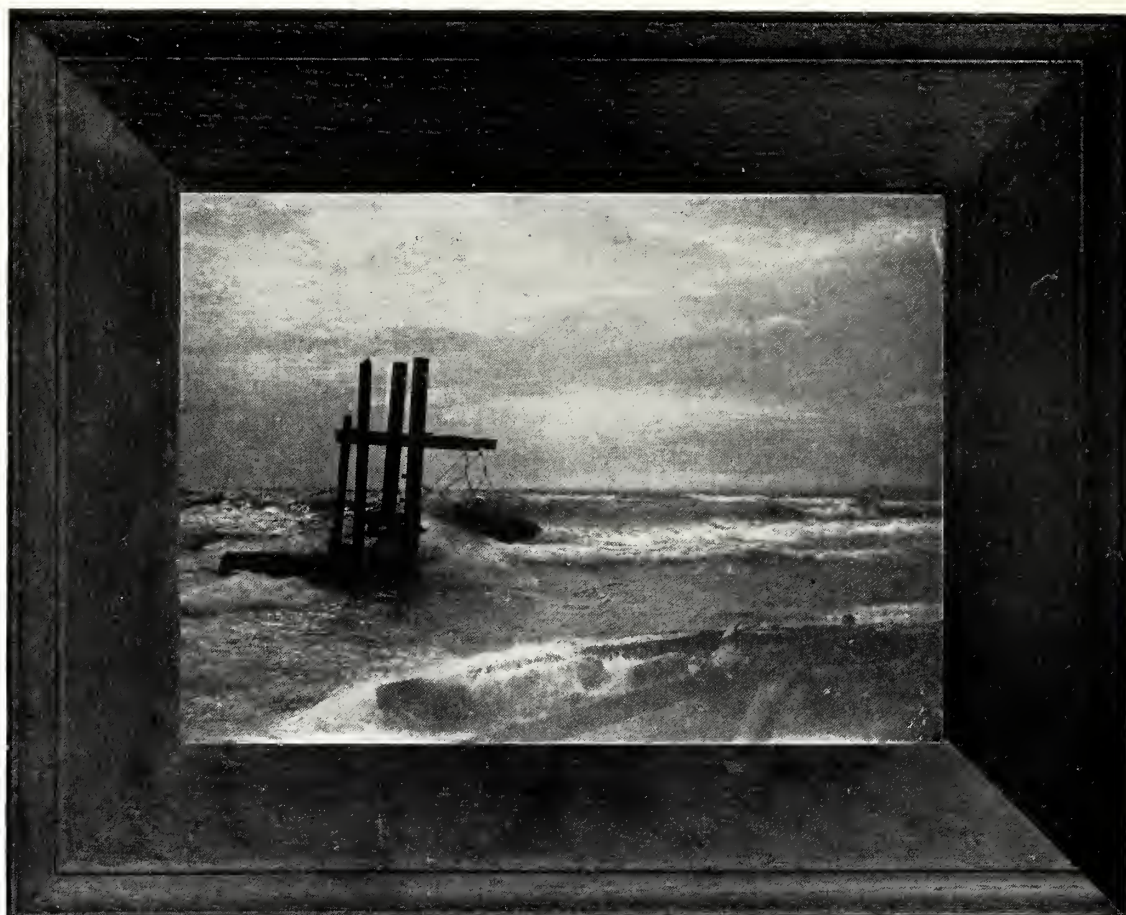
W. H. PORTERFIELD

A WINTER UPLAND

Done? All right, let's go to the trolley by way of the church. You've wanted a photograph of that for months, and to-day's light is good for it. Here we are. Set up your camera so the hazy sunlight will show on the front of the building and that will leave the side in shadow. Buildings always look better that way. Detail in both light and shade, too, on such a day as this.

Yes, there *is* a lot of traffic this morning, but you needn't wait till another day; it would probably be the same then. Stop your lens way down — F. 64 will do; yes, that's U. S. 256 — and give exposure accordingly. Then your passing vehicles won't show, nor the pedestrians either. There! Now you have it right. Let 'er go!

Got it? Well, here comes the trolley for the park. That will take us near the pond. Better stop at Prospect avenue corner? I wouldn't. Not bright enough for snap-shot street scenes



W. E. BERTHING, BUFFALO CAMERA CLUB EXHIBITION

WIND AND SURF

like that. Most all sun, and only now and then a patch of shade there, you know; so you need the contrast a bright sun gives.

Well, here we are at the pond. Now fire away. Don't try to get the whole pond in the picture, unless you're going to have an enlargement made from the negative. Get nearer.

“A little farm well tilled,
And a loving wife, well drilled,
And an ‘ortho’ plate well filled,”

you know — if we may follow the poet, — a bit modernized. Get one end of the pond on your ground glass, with that knoll just to the right of the center. Figure it by the lines on your glass. Haven't got any? Why, you can do such composing in half the time if your screen is ruled. How? Why, with a pencil on the ground side — and then be sure to put the smooth side out, so you won't “smooch” it while focusing. Do the best you can without it for to-day. Let that clump of trees fill the other side of the plate. Cut it in two. Then it will look like a bit of woodland instead of a scattering group of trees. Here's the old raft the boys use to pick pond lilies. Some months yet before the lilies are due, so we'll shove her out into the pond to “break” the stiffness of the water. Now try it. Better? I thought so. You'll have to cut down that bit of underbrush with your pocketknife or it will bob up in your foreground, out of focus. Now's your time. The ripples made by the raft have nearly ceased. Just enough to liven up the picture.



SPENCER KELLOGG, JR.

THE BOOK OF FATE

What shall we do now? Walk to the knoll and get a view of town? I wouldn't do it till we have more sun. You want the sun and shade pretty nearly equal in such a picture, and you can get a clearer focus when the sun is bright. You'd have to have it enlarged, anyway, to get any detail, and enlarging terribly exaggerates mistakes in focusing.

There's a pretty possibility for a picture over there in the woods to the left. Too dark? Well, it is a close bit of woods, but we'll do better than in bright sunlight. Besides, the sun is coming out a bit brighter now.

Make a try for the woodland against the sun. In this spring weather the half-leaved limbs look well against a bright sky. Don't have the sun appear on the ground glass, though, if you want an even-printing negative.

Stop pretty well down, because you want to get the near-by trees in focus as well as the farther ones. Focus on the old stump out there in the middle distance. Got it? Well, now rack out your bellows just a trifle — out, that means from you. It will tend to diffuse the lighting a little and yet bring the foreground in better focus than the distance. That's the way the eye sees things and the haze helps the effect. No, you won't get an "impressionistic" picture. To do that you'd want to "fuzz" it all up till the leaves looked like round globules of something or other. As long as you can tell, without a title, what a picture represents, you can't be reproached as an impressionist.



H. H. BOYCE, BUFFALO CAMERA CLUB EXHIBITION

CATHEDRAL AISLE

Better be getting home; near dinner time. Bless me, it *is*, already.

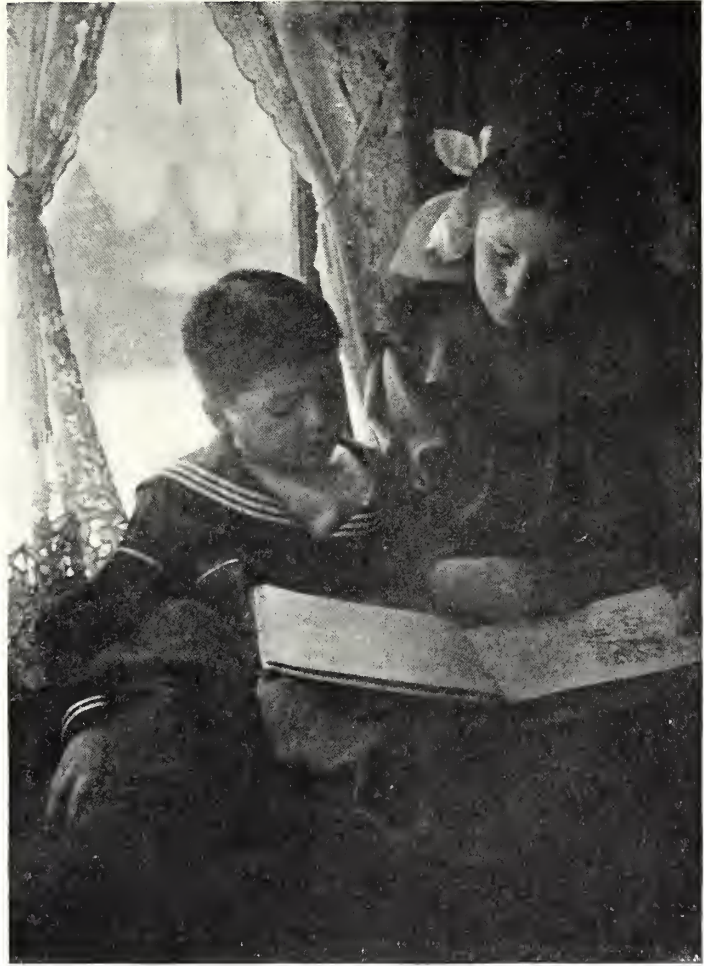
Been slow? Not a bit of it. Started at a quarter past ten to shoot the dog, and now it is just two hours later. That's good time for — let's see: the dog, one; the church, two; the pond, three; and this last one, four. Probably every one of the four will turn out well. That's better than shooting a dozen at haphazard — not to mention the time saved in developing the bad plates.

Got an engagement at three, you say? Well, that'll give you time to get that interior — the library and hall, and looking across into the reception room, you know. When? Why, right after luncheon. No, thanks, I can't stop with you. A little pointer on the interior? Certainly, all I know on the subject, if it will help you. Here's our car. I'll tell you about it while we're riding back.

Put your wide-angle lens in the camera, and stop down to, say, your U.S. 16 or 32 — not beyond 32; you'll make it too slow if you do. Try diffusing the image a little there, too — a *very* little. Then you can't count the fly-specks on the mirror in the farther room.

Obliged to me for some more points? Not a bit of it. Fad of mine, this choosing light for subject, you know. By the way, put your tripod up full height when you do that interior. Wide-angle lenses play pranks with lines in the floor and ceiling, and it's better to include too much ceiling than too much floor.

When you get some moving figures, you'll want bright sunlight; but don't try to take them



E. B. SIDES

THE STORY-BOOK

nearer than twenty times your lens focus; that'll be about fifteen feet from your eight-and-a-half-inch lens.

Landscapes against the sun, where they're most all sun, and little brook scenes and tiny cascades, — they all want plenty of sun, else the water will look as though it had been frozen. Portraits indoors need sunny days, too. Will I come over and take one for you? Certainly. Telephone me any sunny day, and I'll tell you if I can get away.

I know it's against all rules to take portraits near a south window with the sun shining in, but that's my way; pretty fair luck at it, too. Photographic rules are pretty well turned topsy-turvy nowadays, anyhow, so my breaking this one won't count. Yes, the brighter the sun the better, within reasonable limits. I tack thin muslin over the whole window casing; if it's very bright, I use a sheet. Then I hang another sheet or some very white paper on a folding screen to reflect some light toward the dark side of the face, and there you are!

Background? I use an old gray shawl most of the time; hang it just out of focus, you know. A wide window shade of buff holland or "opaque" makes a good screen; so does a piece of Turkey red, if your sitter has light hair and complexion. The Rembrandt backgrounds which you can buy for a dollar are good, too; only I never bought one, thus far.

Takes too long an exposure? Nonsense. What do you call too long? Ten or twelve seconds! Well, I should say so. I can do all I want in a couple of seconds with good light.



M. L. AND E. H. TRACY

THE MARSH ISLAND

I've made the exposure as short as a quarter second in early December — no snow on the ground, either. I was taking a portrait of a baby in a high chair, and the result was quite acceptable.

Underexposed? Yes, it was. Probably two seconds would have been nearer and four seconds better yet; but calling four seconds about right, I figured that the plate had about one fifteenth its correct exposure. Stop? Oh, F. 11; that's your U. S. 8. I'd have used a larger opening but the shutter I have doesn't provide for any. Development? Oh, yes; got to be careful. Nothing really hard about it, though. I put the plate in a tray of half-strength developer till the first appearance of the image. As soon as I could see the plate darken, I took it out of the developer, and without rinsing it laid it in a tray of clear water in which I had dissolved a few grains of sodium sulphite and sodium carbonate, to make the water alkaline. I left it there five minutes, and then I put it back in the half-strength developer again, for one minute. And so I alternated the plate between the two trays; five minutes in the water for every minute in the developer, until I got the detail well out, and then I poured some normal strength developer into a tray and put the plate in it for twenty seconds. That brought the density to the point where I wanted it; the ideal negative is not too dense. I might have left it a minute or even two if it had been in the water all the time, instead of alternating to the half-strength developer. But that half-strength scheme, alternating with a water bath for five times the immersion in the former, —*that*, I believe, is my own idea.

You'll get more brilliant negatives if you cover up your trays during development, especially if you use color-sensitive plates, as I hope you do. Stand your dark-room lamp so that the light will shine to your left or right instead of straight in front; then the plates will be less likely to fog. Hold them close to the lamp for examining for detail, but get them back into the covered tray as soon as possible.

About cloud effects? Oh, yes, I'm a warm admirer of them. Any new ideas about them? Well, I've experimented along a few lines — but here's my corner! Have to leave you to go the rest of the way free from my enthusiasm about a subject in which you may not feel as much interest as I. No? Well, it's kind of you to say so. You see I imagine everybody is willing to go into the subject and get something more than a smattering of what's to be done. Sometimes I don't know enough to stop when I once get started. What? Yes; be home all the evening. Come over and I'll show you some of my cloud pictures and tell you how I made them. Good-bye.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

FOURTH PAPER — DEVELOPMENT



1. *What is Development?* — After the sensitive plate has been exposed in the camera to the action of light, the change which has taken place in the silver salts with which it is coated is invisible. So far as the eye can tell, the exposed plate does not differ from one which has never been acted upon by the light. In order to bring out the latent image resulting from exposure, the plate is placed in a solution called the “developer.” This acts upon it in such a way as to reduce the silver salts to metallic silver, thus forming a dark deposit of varying degrees of opacity according to the varying intensities of the light reflected from different portions of the object photographed. Where the object showed strong lighting, the plate is covered with a black deposit; medium lighting is represented by a gray deposit, while deep shadows and dark portions are represented by almost unchanged film. It will be noticed that the colors are reversed; the whites in nature are black on the plate and the blacks are

white. This is the reason for calling the developed plate a negative. The print made from a negative is called a “positive” because the color values are reversed again to their proper order.

2. *Composition of a Developer.* — Developers are easily adjustable in strength and activity to the requirements of different conditions, and it is easily seen that the worker should understand the composition of his developing solution in order to use it intelligently. In every developer there are five important constituents which have a definite work to perform. They are taken up separately in the five paragraphs which follow.

3. *Reducer.* — The developing agent itself, such as pyrogallol, hydrochinon, metol, eikonogen, or a mixture of any of such agents, is called the “reducer” because it brings out or blackens the invisible image by reducing it to metallic silver in proportion to the amount of light action on each part of the plate.

4. *Accelerator.* — The usefulness of pyro, in common with all the other developers, depends upon its affinity for oxygen, which makes it a reducer of the silver salts. The addition of an alkali to it increases its greed for oxygen and hastens the reducing action. A solution of pyro alone will develop a plate, but the action is too slow to be practicable, and an alkali must be added. The amount of alkali added controls the speed of the developer, which can thus be adjusted to suit the worker. Such an alkali is called the “accelerator” because it hastens the action of the developer. Sodium and potassium carbonate are the alkalies most used for this purpose.

5. *Restrainer.* — A restrainer is a substance which has the power to retard or hold back the action of the developer. The restrainer most used is potassium bromide. The reason why it restrains the action of pyro is because potassium bromide reacts with the reduced silver to again form silver bromide, and the work must be done over again. The restrainer is generally in a separate solution and need not be used except in cases of overexposure. Every photographer should have in his dark room a ten per cent solution of potassium bromide. Prepare it as follows: Dissolve 45.5 grains of the salt in 9 ounces of water, and then add enough water to make 10 ounces of solution.

6. *Preservative.* — A preservative is something which protects the reducer from outside influence and allows it to do its work. Pyro absorbs oxygen very rapidly, turning first yellow, then brown, and finally black, in which state it is useless in photography. Sodium sulphite also has a greed for oxygen and is the most used of all preservatives. When added to the developer



A. ALBERT

PORTRAIT

it acts as an absorbent of free oxygen, thus preserving the pyro from oxidation, and preventing the consequent staining of the developer and film. Sodium sulphite is often correctly called the "stain preventative," for the color of the finished negative can be controlled by the amount of sulphite used. Developers containing a large proportion of sulphite give pure black and gray negatives, while those having a small quantity give negatives of a yellowish or brownish tinge. By increasing or decreasing the amount of sulphite the color of the negative can be controlled to suit the worker. Pyro and hydrochinon, which have an extreme tendency to oxidize when made up in bulk, usually have some acid as an additional preservative. Oxalic and sulphuric are the acids most used for this purpose.

7. *Solvent.* — The last constituent is the solvent — water. This deserves more attention than it generally gets. Many troubles in development are the result of impurities and organic matter in river and spring water, or of particles of iron from the pipes in cities. The water

used for developers should be boiled and filtered, or better, use distilled water if possible.

8. *Making the Developer.* — With this knowledge of the purposes of the chemicals used the worker should be able to compound the following developer and use it understandingly. It is a formula which has been found satisfactory for most of the ordinary plates on the market. Mix the solutions in the order given and put each in a well-stoppered bottle until wanted. Be sure that the oxalic acid is thoroughly dissolved before adding the pyro. It will be advisable to make the solutions of sulphite and carbonate by hydrometer test as weight is not always accurate, owing to the varying purity of the chemicals and the varying strength of the different brands. The carbonate solution should test 40, and the sulphite 60. Hydrometers are not expensive, and will insure correct compounding of the developer. Directions accompany each hydrometer.

Pyro Developer. Stock solution No. 1: water, 16 ounces; oxalic acid, 12 grains; pyro, 1 ounce. Stock solution No. 2: water, 16 ounces; sodium carbonate crystals, 4 ounces. Stock solution No. 3: water, 16 ounces; sodium sulphite crystals, 4 ounces.

9. *Preparing for Development.* — Every beginner should adopt a system in his work and he will soon learn to follow the routine with mechanical precision. It is important in the dark room to have a place for everything and everything in its place, so that any article may be found without trouble in the semi-darkness. The requisites for developing are few. You will need two developing trays, a tray or fixing box of hypo solution, a glass graduate, a wash box, a camel's-hair brush, and a good supply of water. Have these ready before you begin work.

10. Prepare the developing solution as follows: Take 1 ounce of each of the three stock solutions and add 7 ounces of water. Nine or ten ounces of water may be needed in very hot weather if the developer cannot be kept cool. This developer is excellent for any brand of plates, although it may at times, with certain plates and classes of work, be improved by slight alterations. The worker should become familiar with the purpose of each chemical in the formula, and by careful criticism of his results and a little good judgment should soon be able to adapt the developer to the work in hand. If the brand of plates you are using strengthens quickly, increase the amount of water; if you do not get the required strength, decrease the amount of water. Should you find that your negatives are yellow in color, *strengthen* the sodium sulphite solution. If there is a lack of color and the negative is bluish, both in the blacks and grays, reduce the *strength* of the sulphite solution, but in either case use the same *quantity* in preparing the developer for use. This is regulated entirely by local conditions, such as quality of the water and condition of the sulphite. Always remember that sodium sulphite controls the color of the negative; sodium carbonate gives fine detail; and pyro gives strength and contrast. You will not need to increase the strength of the carbonate except in rare instances of underexposure, as it will produce fog and flatness in a properly or over exposed plate. Should your plates develop with too much contrast, use less pyro solution; or if they develop flat, increase the pyro.

11. *Temperature.* — Keep the temperature of the developer as nearly as possible seventy degrees, which will be about the temperature of an ordinary room except in very hot or cold weather. This is quite an important point, as temperature has a marked effect upon development. A developer which is too warm will fog the plate and will often soften or even melt the gelatine, while if it is too cold, development will proceed very slowly and poor results are sure to follow. The worker need have no anxiety on this point, however, for if he will keep his dark room at an ordinary temperature at all times of the year, at a temperature in which it is perfectly comfortable for him to work, his developer will be at a proper temperature to use. Should it be impossible to regulate the temperature of the dark room, the strength of the developer can be made to partly obviate the trouble. If the room is cold, the developer should be stronger than the normal solution, and if it is hot, the developer should be weaker.

12. *The Fixing Bath.* — Prepare the fixing bath as follows: water, 4 parts; sodium hyposulphite, 1 part. Any amount may be made using these proportions, but a fresh solution should be made each time you develop. This is especially advisable in summer, as an old solution would have a softening effect on the film. It has often been found necessary to use a hardening bath



FRAU A. HERTWIG, CHARLOTTENBURG

THE SISTERS

in combination with the hypo to prevent this. There is perhaps no better all-round fixing solution than the acid bath recommended by the makers of Velox paper. It is equally good both in winter and in summer, will keep indefinitely, so that it may be made in quantities, and may be used repeatedly before it is rendered unfit for use, if it is kept from becoming alkaline by the occasional addition of a few drops of acetic acid. The acid fixing bath may be prepared as follows: sodium hyposulphite, 16 ounces; water, 64 ounces. Then add the following hardening solution: sodium sulphite crystals, $\frac{1}{2}$ ounce; acetic No. 8, 3 ounces; powdered alum, $\frac{1}{2}$ ounce; water, 5 ounces.

13. Having prepared your fixing bath, pour a sufficient quantity into the fixing box or into a tray which you are not to use for any purpose other than fixing. A fixing box is much more satisfactory than a tray because several plates may be fixed at one time, and also because as fast as the plates are developed they may be rinsed, set on edge in the grooves of the box, and allowed to remain until all have been developed without fear of dirt settling on the films and

causing pin-holes. Great care must be used to prevent the slightest trace of hypo reaching the plate while in the developer, and fogging it. Have plenty of clean water in the dark room and wash your hands after touching the hypo bottle or tray. Cleanliness and order are of the greatest importance.

14. Use two trays for your developer and always wash them carefully before putting in any developer. Save your used developer, unless it is too badly stained, and keep it in a tightly corked bottle. Add one third fresh developer to it and pour a sufficient quantity into one of the trays for cases of overexposure, if any are found. Have your normal developer prepared according to the formula and ready in a graduate for use. Make sure that no white light enters the dark room, and light the ruby lamp.

15. *Pouring on the Developer.* — Remove one plate from the holder and place it in the empty tray, film side up, after having brushed it over lightly with a camel's-hair brush to remove all dust. Now take the graduate of developer and flow it into the tray, taking care to cover the whole plate with a single sweep of the solution. If you do not do this, it may cause streaks and air-bubbles. Do not bring the tray too close to the ruby lamp, especially during the first stages of development, for the plate is then very sensitive. Rock the tray gently so as to constantly bring fresh solution in contact with the film.

16. *The Appearance of the Image.* — In about thirty seconds, if the plate was properly exposed, it begins to darken in spots. The high lights, or most strongly lighted portions of the picture, will darken first, then the half tones, or medium lighted portions, and last of all the dark portions or shadows will appear. If the picture is a landscape, the sky, which has reflected the strongest light, will appear first. It will show as black patches here and there on the plate. By the time the sky is well out other objects will begin to show, and detail after detail will gradually become visible until the shadows appear and the whole picture is distinctly seen. The high lights are now black, the half tones gray, and the deep shadows almost white. After the image is well defined, lift the plate carefully from the tray and look through it toward the ruby light to see if the detail is well out. Handle the plate by its edges so as not to harm the soft film. To explain what is meant by detail, look at the trees in the landscape. If this part of the plate is developed nearly enough, the lights and shadows and the forms of the leaves will show plainly. If the film is clear, there is no detail. Replace the plate in the solution and rock the tray gently as before.

17. *When to Stop Development.* — Do not make the mistake of thinking that the plate is fully developed when the image appears fully brought out. Development usually takes from four to eight minutes. After the detail is secured the plate must remain longer in the solution to secure contrast and density. Should it be fixed as soon as the detail is well out, the resulting negative would be thin and flat. After replacing the plate in the developer, the image gradually begins to fade, slowly at first, and then more rapidly. At this point if you look at the glass side of the plate you will probably find that the image is beginning to show through the emulsion. When to stop development is perhaps the most important point in the process. On this the success of the negative depends. It is almost impossible to give a fixed rule because of the differences in the many brands of plates, and the varying conditions under which they are developed. The development of a properly exposed plate is generally completed when the contrast between the high lights and shadows is as you wish it, and the image shows through quite clearly on the back. At such a time the plate will usually have become black on the film side, but not always. Last month mention was made of the well-known rule, "Expose for the shadows and let the high lights take care of themselves," and many photographers supplement that with, "Develop for the high lights and let the shadows take care of themselves." This is certainly a good proof of correct exposure, for if the plate was correctly exposed for the shadows of any ordinary view, and developed for the high lights, that is, until the high lights are brought down to the glass and can be seen on the back of the plate, the resulting negative will have sufficient density and contrast. If it has too much, or not enough of these qualities, the next exposure should be altered as indicated

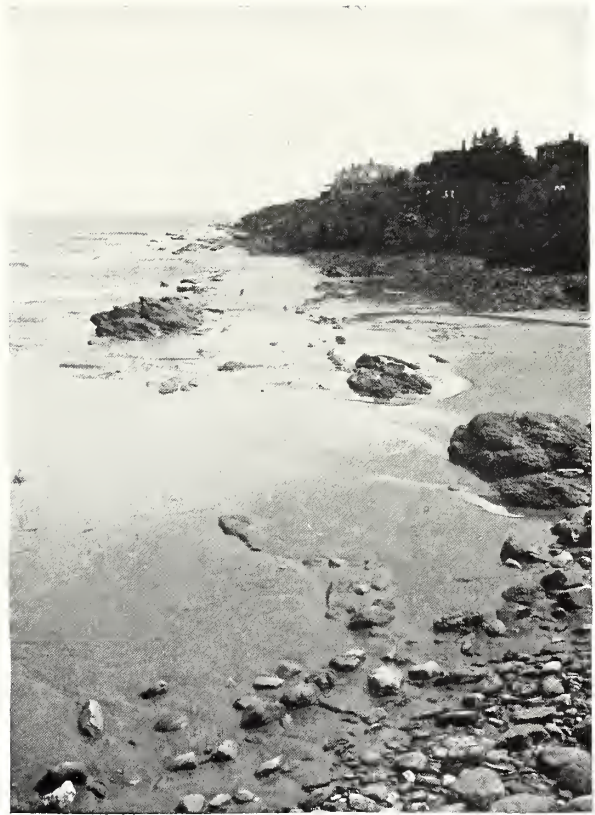


J. D. HASSON

OVER THE HILL

by the results. This is a good working rule for the advanced amateur and also for the beginner who wishes to test his exposures that he may learn the value of different lights so as to get a correct exposure every time. If the plate cannot be duplicated, however, and there is uncertainty as to the exposure, do not depend wholly upon this method but have an eye out for detail as well as contrast and density. You cannot always depend entirely upon looking at the back of the plate because of the varying thickness of the emulsions used in different brands. The beginner should choose some good brand of plates, and if he uses it wholly for all ordinary work, he will soon learn its every peculiarity and have no trouble whatever in knowing when to stop development. Trouble comes of changing if the first results are not satisfactory. Any of the well-known brands will produce good results if properly used, and most of the troubles experienced by amateurs can be traced to incorrect use rather than poor quality of plates.

18. *Factorial Development.* — When to stop development is a great question with the beginner, and many of his negatives are spoiled by uncertainty at this point. Many workers prefer to use the factorial method of development advocated by Alfred Watkins and others, and for the beginner this method insures fair negatives from the start. In fact, the method enables beginners after a few trials to develop plates with an ease and correctness which otherwise could only be obtained after years of experience. The method is dependent upon the fact that development proceeds very steadily, there being a definite proportion between the time required for the appearance of the high lights after the developer has been poured on and the whole time required for complete development. Knowing the time required for the appearance of the high lights, it is therefore an easy calculation to determine when to stop development by multiplying this time by a certain factor which depends principally upon the nature of the developer and to a less extent upon the plate used and the character of the work in hand. For the developer given in this paper the multiplying factor is 12. Place your watch where the ruby light will fall on it and note the time given by the second hand when the developer is poured over the plate and again the instant the high lights show a trace of darkening. If the elapsed time is 10 seconds, for instance, $30 \times 12 = 360$, and at the end of 360 seconds or 6 minutes development will be complete. Even temperature is important for successful use of this method. If the resulting nega-



W. SCHREMPF
THE SHORE AT NEWPORT

tives do not suit the worker, being too thin or too dense, the factor may be varied. A higher factor will produce more contrast and density, while a smaller factor will produce less. For portrait negatives 10 will be a better factor.

19. *Overexposure.*— All plates which you think are properly exposed should be started in the normal developer and completely developed in it if the exposure proves to be correct. If the whole image flashes up very quickly and it is allowed to remain in the normal developer, it will blacken over in a few seconds instead of coming out detail by detail as already described, and the resulting negative will be flat, foggy, and lacking in contrast, although full of detail. This is the result of overexposure, and should not be allowed to take place. If you see that the high lights are coming up too quickly, remove the plate from the tray at once and rinse it thoroughly in clean water to stop rapid development, and then place it in the tray containing the old developer and rock as usual. The bromide set free from the plates previously developed with this solution will at once check rapid development and allow it to progress at a slower pace. As the bromide acts to a greater extent upon the shadows, thus permitting the high lights to build up density first, quite a little contrast will be secured which would otherwise be lost. When development is nearly complete, replace the plate in the normal solution to give snap to the image. If the plate is greatly overexposed and develops too fast in the old developer, remove it and rinse thoroughly as before, adding two or three drops of a ten per cent solution of potassium bromide to the developer meanwhile, and then complete development in the doctored solution. The resulting negative will doubtless need some after treatment, but that will be taken up in another paper of this series. When you think before development that a plate has been overexposed, do not put it into the normal developer, but prepare a weak solution strong in pyro and well restrained with bromide, something as follows: water, 7 ounces; stock solution No. 1, 1 ounce;

stock solution No. 2, 2 drams; stock solution No. 3, 1 ounce; potassium bromide, 10 per cent solution, 5 drops. An overexposed plate must be developed longer than one which is properly timed, in order to get sufficient contrast. Develop until you cannot see through the high lights when the plate is held before the ruby lamp, and then let it remain longer than usual in the acid fixing bath.

20. *Underexposure.* — When the image appears very slowly in the normal developer the plate is known to be underexposed, provided, of course, that the temperature of the developer is what it should be. If the half tones do not follow the high lights in a reasonable time, remove the plate from the developer and place it in a dish or tray of clean water which can be covered, and allow it to remain for ten minutes or so until the following fresh developer has been prepared: water, 5 ounces; stock solution No. 1, 2 drams; stock solution No. 2, 4 drams; stock solution No. 3, 4 drams. Now place the plate in this solution and continue development until the required amount of detail and density is secured. Do not depend wholly upon looking at the back of the plate to tell when to stop development, as the image, especially the high lights, appears through the emulsion very soon on an underexposed plate. It will usually be necessary to continue development until all possible detail in the shadows gets down to the glass and shows through the back.

21. *Fixing.* — As soon as the plate is developed it should be rinsed in clean water to remove as much of the developer as possible, and placed in the fixing box. The plates should remain in this fixing bath at least twenty minutes, and if the acid bath is used, a longer time will not hurt them and they may be clearer and better for it. This is not so advisable with the plain hypo, however, as it is more likely to stain or soften the film. The acid bath may be used repeatedly, but a plain solution of hypo should not be used except on the day it is made.

22. It is the purpose of the fixing bath to render the developed plate permanent and make it more nearly transparent. The film of a plate after development consists partly of metallic silver and partly of un-reduced silver bromide which is still very sensitive to white light. It is obvious then that the unchanged silver bromide must be dissolved before the plate can be used for printing. There are a number of solvents of silver bromide, but sodium hyposulphite, commonly called "hypo," is the most satisfactory. Its action on the unaltered silver salt is peculiar. It first forms a transparent double salt which is insoluble in water. Many beginners make a serious mistake at this point, for the negatives will be clear in about ten minutes, having lost all trace of their former milky whiteness. If fixation is stopped as soon as the plate is cleared, this insoluble salt cannot be removed from the film by the most prolonged washing, and in time the negative will turn yellow and finally brown in spots or over the entire surface. This double salt, although insoluble in water, is readily soluble in an excess of hypo solution, and when so dissolved is converted into a compound which is soluble in water and easily removed from the film by washing. The proper remedy is obvious: Leave the negative in the fixing bath as long again as is required to wholly remove the milky appearance from the back of the plate. This will usually be about twenty minutes.

23. *Washing.* — When the negatives are thoroughly fixed, transfer them to the fixing box and allow the water from the faucet to run slowly into it for an hour. Before putting them away to dry dip a tuft of absorbent cotton in water and carefully swab off the film side of each negative so as to remove any scum or dust. One final rinsing under the faucet and they are ready to set up against the wall or in the negative rack to dry. Never attempt to dry negatives by placing them over a register or stove or in the sun, as you will melt the film. They should be dried in a room which is not damp or subject to sudden changes of temperature, which will cause streaks in the film as it dries. If quick drying is necessary, soak each negative in alcohol for five minutes after washing and swab off as usual, using alcohol instead of water. A negative treated in this way should dry in about twenty minutes.



GEORGE L. ABELL
LANDSCAPE: ORIGINAL AND IMPROVED PRINTS





GARO
ORIGINAL LANDSCAPE

ON THE WORKING UP OF PICTURES

On a bright autumn day last year, when the woods were resplendent in their brilliant hues, but before the leaves had begun to fall, eight members of the Lens and Brush Club of Boston started on a photographic trip to South Natick. One of them, Mr. W. H. Partridge, had discovered there a most picturesque locality, where an old sawmill, a brook, a mill-pond, and a beautiful tree-embowered road offered a wealth of photographic material. His plan was that each photographer or artist should select what seemed to him the most picturesque spot, and make an exposure. This was accordingly done, and although at least one painter who was present had never used a camera, each member of the party got a satisfactory negative. A set of prints was made from the untouched negatives, and then the photographers set to work to "improve" the negatives, and thus make it possible to get prints which satisfied their artistic ideals. They were allowed to do any work desired on the negative, but not on the print. Some members of the party chose to do a great deal of work, others simply trimmed the original print to make a pleasing composition.

We have selected from the picture made on that day three of the original prints, and the corresponding finished pictures, and they are reproduced together with this article. Mr. Abell has done practically no work on his negative. On study of the picture he discovered that his



GARO
LANDSCAPE WORKED UP

composition lacked unity, having three strong vertical groups. Sacrificing the middle one, he obtained two pictures, each with much simpler and stronger composition. There is nothing in the left-hand print to suggest an oval, and we should prefer a rectangular form for this print as well as the other.

Mr. Garo has, by working on the negative, given form and direction to the leaf-covered roadway, and has thereby introduced a motive which is absent from the straight print, although it undoubtedly existed in the original. The strengthening of the sapling does not appeal to us as so happy a touch, as we should have preferred to leave the trunk in the foreground the most prominent.

Mr. Evanoff has absolutely transformed his picture. Hardly a value is left as it was originally, and while the composition is undoubtedly much simpler and stronger, the question of the legitimacy of such wholesale changes will be sure to arise. We leave our readers to form their own conclusions as to the value of the changes made in these three pictures. We have reproduced them as a valuable object lesson, showing that the finished picture need not be merely what was seen on the ground glass.



EVANOFF
ORIGINAL AND FINISHED LANDSCAPE





J. EDWARD GREENE

ON A DAY IN SPRING

OUR ILLUSTRATIONS

FRANK ROY FRAPRIE

The illustrations accompanying the first article in this number are part of a series of historical buildings photographed several years ago by Wilfred A. French. The series covers almost all the buildings of importance which were accessible at that time, and no better commentary could be made on the need for accumulating such records, than to say that already it would be impossible to duplicate most of them, though none are fifteen years old. They are excellent specimens of what historical record prints should be.

We publish this month six reproductions of pictures which are exhibited in the annual exhibition of the Buffalo Camera Club. This is at present one of the most enthusiastic organizations of the kind in the

country. It suffered the fate of most camera clubs in passing through a dormant period, but at present, under the guidance of a number of the younger members, is displaying great activity.

The frontispiece, by Edwin Kellar, displays in marked degree the quality of simplicity in composition on which we have recently laid so much stress. The print has charming atmospheric values, and the rendering of perspective is such that the hill really seems to lift away from the spectator in a way which is quite unusual in photographic prints. As a piece of landscape work, it reminds one of the best work of the English school, and is worthy of a place beside it.

"A Winter Upland," by W. H. Porterfield, is of similar composition to the last picture, but fails to carry the senses upward with its convincing truth. The print is very decorative, and the snow is passably well rendered. One might wish something better in the lower left corner than the straggling grasses which have apparently lost their way into the print, but Mr. Porterfield has Whistler as an authority for such a venture, so can justify himself. Bertling's "Wind and Surf" is another simple composition well rendered in most of its values, though perhaps lacking transparency in the shadows. The horizon line seems rather near the center, and lowering it a trifle would have subordinated still more the timbers in the foreground, which are excusable only as affording a spot for the breaking of the surf.

"The Book of Fate," by Spencer Kellogg, Jr., is a rather good composition, but the execution would seem to imply that the fates sat on Persian rugs instead of the rocky cave-floor of the Grecian myth. The rendering of the flesh is without texture, and the arm seems disproportionately long.

"Cathedral Aisle" is a pleasing and quiet study of tree trunks without particular force, and



BUFFHAM STUDIO
PORTRAIT

inadequately reproduced. It has lost holding power by the reduction in size, and the atmospheric charm of the original is not wholly present in the half-tone plate.

"The Story-Book," by E. B. Sides, is a pleasant window study, which has also lost in reproduction. On the whole, the pictures serve to show that the club has a number of earnest workers who have some good ideas, and considerable power of execution, and from whom we may expect better things later.

We have space but for a cursory mention of some of our other pictures. "The Marsh Island" is suggestive rather than descriptive, but expresses the mood of twilight rest rather nicely. It is an example of repetition of horizontal line, a very pleasing form of composition when skilfully handled. Mr. Albert's portrait is an example of his earlier work done abroad. We hope to be able to show something better later, now that he is domiciled in Boston. Frau Hertwig's portrait group is a reproduction of a gum print and shows good handling of the values in the whites, as well as good grouping.

"Over the Hill" is a pleasant little bit of landscape, up to the average, but failing to satisfactorily convey the idea of a hill of any magnitude. Schrempf's "Shore at Newport" is a foreground study, and contains several graceful curves which carry the eye to the principal mass.

Mr. Greene's three prints have been so grouped as to form a page decoration, and would form an admirable scheme for a set of mantel tiles. In this form they show how bits of prints



MRS. M. S. GAINES

FLOWERING DOGWOOD

often lend themselves to decorative purposes. A pleasing child study by the Buffham Studio and Mrs. Gaines' group of dogwood complete the pictures to be criticized here.

PHOTOGRAPHIC EXHIBITIONS AND COMPETITIONS

SOCIETY OR TITLE	DATE	ENTRIES CLOSE	INQUIRE OF
First American (Fifth Chicago) Salon at Chicago.....	Mar. 2-22	.....
Photographic Society of Ireland.....	April 3	Mar. 27	R. Benson, 35 Molesworth St., Dublin, Ireland.
Boston Camera Club (for members).....		Apr. 4-15	
International Artistic Exhibition, Berlin.....	Apr. 7-May 8	.....	Franz Goerke, Maasenstr, 32, Berlin, W. Germany
Providence Camera Club (for members).....	Apr. 10-16	Mar. 27	J. B. Whittmore, 152 Weybosset St., Providence, R.I.
Toronto Camera Club Salon.....	Apr. 11-15, 1	.....	Hugh Neilson, Toronto, Canada.
International Photographic Exhibition, Genoa.....	Spring, 1905	Mar. 1, 1905	Sig. Gigi Scutto, Piazza Fontane Marose, 18, Genoa, Italy.
Ballarat Camera Club.....	May 9	May 2	G. Montgomery, 201 Sturt St., Ballarat, Victoria.
First American Photographic Salon in Boston.....	May	.....
Photo Club de Paris.....	May 10-June 10	Mar. 1	Paul Bourgeois, 44 rue des Mathurins, Paris, France.
Northern Photographic Exhibition, Leeds.....	July 4	.....	F. G. Issott, 62 Compton Rd., Harehills, Leeds, Eng.
Salon and Congress of Photography, Brussels.....	July-Aug.	.....	M. Vanderkindere, Palais du Midi, Brussels, Belg.
GIVER	CLOSES		PRIZES
Woman's Home Companion.....	Monthly		\$25, \$10, \$5.
Burr McIntosh Monthly, New York (Outdoor Photographs).....	Monthly		\$15, \$10, \$5.
Burr McIntosh Monthly, New York (Freak Pictures).....	Monthly		\$10, \$5.
Photogram, Arundel St., Strand, London.....	Monthly		One guinea and half guinea.
The American Boy, Detroit.....	Monthly		\$2, \$1.
National Sportsman, Boston.....	Monthly		\$5, \$3, \$1, \$1.
Browning's Magazine, Boston.....	Monthly		\$5, \$3, \$2.
The Book-Lover, New York.....	Monthly		\$5, \$3, \$2, \$1.
American Amateur Photographer.....	Monthly		\$5.
Western Camera Notes, Minneapolis.....	Monthly		\$5, \$3, \$2 in goods.
Field and Stream (Sporting and Outdoor Pictures).....	Monthly		\$5, \$3, \$2, \$1.
Leslie's Weekly, New York.....	Weekly		\$10, \$5, \$1.
Buffalo Express.....	Weekly		\$5 to \$25.
New York Evening Mail.....	Weekly		\$5.
Commercial Advertiser, New York.....	Weekly		\$3, \$3, \$2, \$1.
St. Louis Star.....	Weekly		\$5.
Seattle Post Intelligencer (Western Scenes).....	Weekly		\$2.50, \$1.50.

EDITORIAL DEPARTMENT

OUR MUSICAL NUMBER

THE May issue of the PHOTO ERA will be a musical number, specially devoted to pictures of native-born American composers, vocalists, and musicians of recognized merit and distinction. Only the photographs of artists of the first rank have been selected for publication. They have been especially invited to pose before the leading artist photographers of the country, also especially chosen for this purpose by us, and the result is an achievement in art interpretation never before equaled in this country. Our purpose was and is to show the application of the advanced photographic art of our day to the interpretation of musical genius.

The names of Messrs. Garo, Macdonald, Eickemeyer, Hollinger, Strauss, Curtiss, Pierce, Rosch,¹ Evanoff, Hearn, Barrows, Zaida Ben Yusuf, are names to conjure with in the modern photographic world. It is a galaxy of photographic greatness rarely to be met with, and the highest and best possibilities of the photographic art are theirs to command.

To these artists has been intrusted the task of "securing the shadow ere the substance vanisheth" of America's contribution to the musical art and genius of to-day. Among the composers included in this selection are John K. Paine, Horatio Parker, Mrs. H. H. A. Beach, G. W. Chadwick. The American conductors are represented by Emil Mollenhauer, Walter Damrosch, and Wallace Goodrich. Among the organists pictured are Charles Galloway, Clarence Eddy, and B. J. Lang. Among the violinists are Max Bendix, Marie Nichols, and Olive Mead. Some of the singers are Lillian Nordica, Louise Homer, Mary Hissem de Moss, Isabelle Bouton, Jessie Ringen, Evta Kileski Bradbury, Theodore Van York, Francis Rogers and others. Among the American pianists are Ernest Richard Kroeger and George Proctor.

Such an aggregation of musical genius has seldom if ever before been grouped together in this way, and we are especially proud of the showing at this time, as it disproves the claim openly made by some that America takes its art from Europe. Such a body of universally acknowledged artists effectually gives the lie to this charge and fills us with patriotic pride in their artistic achievements, and the promise it gives of a distinct contribution towards the formation of a National School later on.

As studies in portraiture, these photographs will have a special value for the photographer, who will find in them excellent examples of lighting and posing and skilful handling to bring out the artistic character in the sitter. Each portrait has been made by a master worker, with full appreciation for the qualities embodied in his subject. We promise our readers a rare treat in presenting these pictures of American musical celebrities in our May issue.

CLAUDE MONET

THE Copley Society of Boston has opened a picture show in Copley Hall of that city during March and April, devoted exclusively to the work of Claude Monet. It is the third of the "one man shows," inaugurated by this society, and fittingly continues the series begun by Sargent and Whistler in former years. For thirty years Monet has been the leader of the modern impressionist school of art, with men like Manet, Degas, Pissaro, Renoir, and Fantin-Latour. No modern painter has escaped his influence. Not only have they come to accept his pictures at their proper value, but they appreciate the vibrations of light and color which they never saw before Monet painted them in his pictures. Indeed the impressionist theory that sunlight dissolves tones has revolutionized modern painting.

Exactly how far the photographer can be benefited by a visit to this exhibit is an individual matter not easy to determine. Although the Monet portraits are few in number, they are of a quality to show that he might have become an excellent figure painter had he so chosen. Along

the lines of breadth and simplicity of treatment there is much for the photographer to learn. The laws of balance between light and dark, the skilful handling of masses and tone values, and his unwearying search after truth are always in evidence. To appreciate the value of sincerity in picture making, to master the possibilities of varied expression, to realize the wonderful possibilities of sunlight in rendering atmosphere, modeling, texture, individual character, are all points which he emphasizes and which the photographer can apply to his own medium.

THE FIRST AMERICAN PHOTOGRAPHIC SALON

Some controversy having recently arisen in the photographic press in relation to the amount of work done by the jury which selected the pictures for the First American Photographic Salon, we wish to make the following statement of facts, which may be verified by application to the proper authorities.

The first sitting of the jury took place on Monday, Nov. 14, 1904. At the sitting 11 members of the jury were present. It had been apparent before this sitting took place that the number of pictures on hand was more than the jury could carefully inspect, therefore Mr. John La Farge, President of the jury, had authorized a preliminary selection on the afternoon before — some 900 pictures, from which the whole jury selected 250. On the morning of the 15th, representatives of the photographic press were present to select pictures for reproduction, and this fact was made known to them. It was then suggested that captious criticism might be made because the full jury had not seen all the pictures, and it was thereupon decided to ask the full jury to sit again to inspect all the pictures which they had not seen.

The full jury accordingly had three more sessions, at one of which they passed upon the foreign and California pictures and other late arrivals. At the second sitting all of the remainder of the pictures were placed in the room standing in ranks six feet deep, back to back, around all four walls of the immense assembly room about 40 x 70 ft.— and also piled four feet high over the front third of the room — and the jury divided into small groups and collectively or individually inspected each picture. Each artist who found a print which appeared to him to have the least merit placed it aside and all of these prints were then placed upon the easel in the center of the room and voted upon by the whole jury. In these three sessions about 150 additional pictures were selected.

It seems to us that no fair-minded critic can say that the whole of the pictures were not passed upon by the jury. While undoubtedly there were many prints which were not seen by every member of the jury, every print was passed upon at least twice by one or more members.

Owing to the enormous number of pictures submitted it was practically impossible that all of the members of the jury should see every individual print, but the prints were all inspected, and selected or rejected, by the jury and not by any officer of the Metropolitan Camera Club.

Having made this statement of facts we consider the history of the First American Salon as closed.

THE INDIAN QUESTION

Child Bayley, editor of *Photography* (London), who thinks the modern American citizen has all the social characteristics of his prototype, the American Indian, publishes the following in a recent issue of his paper: —

“Far more space than it deserved has already been given to the egregious ‘First American Salon,’ recently organised in New York, and held with much booming in a picture frame shop in Fifth Avenue. We have now received a lengthy letter from Mr. Rubincam, in which he says: ‘I can only feel that those publications refusing to give space to this letter stand convicted of a selfish interest, and sacrifice all right to contend that they stand for the advancement of photography.’ Well! Well! If Mr. Rubincam thinks the readers of *Photography* want a column of reasons why the leading photographic workers in the U. S. A. did not send to the exhibition, he sadly underrates their intelligence.”

We have very little sympathy for Rubincam, from the woolly West, brandishing his tomahawk, dancing a war-dance on the First American Photographic Salon, and incidentally under-rating the intelligence of the readers of *Photography*. But we do feel keenly for editor Bayley, who must choose between his readers and this self-appointed mouthpiece of his Photo-Secessionist friends in the States. The editor's plight is pitiable indeed. It may console him, however, to have his ideas on the Indian question thus confirmed again by Rubincam, who, we must confess, has all the characteristics of a real live Indian; although we know that General Sheridan always maintained that the only good Indians were dead ones.

ART IN PHOTOGRAPHY

With the best of intentions, man is not always the master of circumstances, and so it happens that the first number of *Art in Photography*, announced for the end of February, is, at this writing, the middle of March, still in embryo. Indeed, it is an even question if No. 2, its younger brother, will not beat it into the world, and thereby receive the title of the first-born. Our plans were carefully laid, and the number was well in progress last November, but misunderstandings arose, which had to be settled by a correspondence across the wintry Atlantic, and some material for the first number was very late in coming to our hands. Our readers may rest assured, however, that the number will appear shortly, even if a month late, and the second number will be on time, being, indeed, now nearly ready for the printer.

We wish to announce once more that the subscription list of this magnificent publication is still open to all without regard to photographic belief, and that any subscriber to the PHOTO ERA may receive six numbers, beginning with No. 1, for \$9.00. Each number will contain at least four photogravures, and a large collection of mounted half-tones, the best work of the best workers of the world. The size of the page will be 12 by 18 inches, a fitting size to worthily set forth the beautiful pictures which we have gathered.

DEATH OF CHARLES S. ABBOTT

We are pained to announce the death of Mr. Charles S. Abbott, President of the American Aristotype Company of Jamestown, N. Y., which occurred on March 2, at Oak Lodge, near Enfield, North Carolina. He was ailing for only a short time, and went South for his health, but the end came unexpectedly, and was a deep shock to his business associates. By virtue of his connection with the American Aristotype Company and the Eastman Kodak Company of Rochester, N. Y., Mr. Abbott was a leading figure and a very important factor in the photographic world during recent years.

In 1889, at the age of thirty-one, Mr. Abbott became identified with Hon. Porter Sheldon at Jamestown, N. Y., in the manufacture of photographic paper by a new process, which eventually revolutionized the photographic business and brought fortune to the originators of the enterprise. Originally the business was known as the American Aristotype Company. Mr. Sheldon was president and Mr. Abbott was secretary and treasurer, until 1899, when the General Aristo Company was formed and purchased the stock of the local concern.

This company was in turn succeeded by the Eastman Kodak Company, of which Mr. Abbott at the time of his death was vice-president. He was also president of the Seed Dry Plate Company of St. Louis, a director of the Chautauqua County Trust Company, and had for some time held the position of president of the American Aristotype Company.

In 1902 Mr. Abbott went to London and introduced the products of the General Aristo Company to England and the Continent. He organized a force of salesmen and soon had his papers on sale in the principal centers of Europe.

Apart from his fine business ability Mr. Abbott was a man of winning personality, generous in his dealings with others, and a loyal, public-spirited citizen. By his personal acquaintances throughout the country, whose name is legion, he will be sadly missed. We mourn his loss, because of the services he rendered the photographic world. His place in it will be difficult to fill.

THE ROUND ROBIN GUILD

Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner. Membership may be obtained by sending name and address to the PHOTO ERA.

OUR PRIZE COMPETITION: PORTRAITS

THE subject of the Round Robin Guild prize competition, which closed in January, was "Portraits." The entry was large, and the editor examined with great pleasure the examples of the art and skill of the Guild members. Many of the pictures were excellent, others very good indeed, and only a few mediocre, — which is saying a great deal for the proficiency of the contestants.

In looking over a collection of pictures it is an easy matter to select those of the highest merit; but when these are selected, it requires very careful judgment to decide which pictures of comparatively equal merit shall be given the preference. Where there seems to be no choice between two pictures, the other work of the two competitors is examined and the highest mark given to the one whose general work is the better.

Members have written asking to have their pictures criticized, and the faults and merits pointed out. It is not quite feasible to take up individual criticism in the pages of a magazine, and it will be found quite as helpful if the faults of certain pictures are touched upon and suggestions given for their remedy.

Half a dozen portraits have been selected as an object lesson in what to avoid when making portrait studies.

The first is that of a woman in middle life. The pose is a standing one, and the subject wears in her hair — which is done high — a large white aigrette. In her hands, which are brought together in front of her, she is holding a white satin fan in such a position that it catches a strong light.

What is the first thing in a picture which attracts, or rather catches, the eye? It is the high lights. The eye involuntarily seeks out these spots of light, the shadows only presenting themselves to the vision as the gaze wanders from one part of the picture to the other.

As I glance at the picture just described the first thing which my eye rests upon is the white aigrette in the hair. This demands my attention whether I will or no. The next thing which clamors to be seen is the white fan. The other spot of light is on the face, but is much more subdued, and is the last point to which the eye turns. Covering the aigrette and the fan with bits of paper the tone of the print, I see an excellent portrait; the lighting is good, the pose graceful and natural, and the gown, — which is of some soft, dark material admirably adapted to photographic



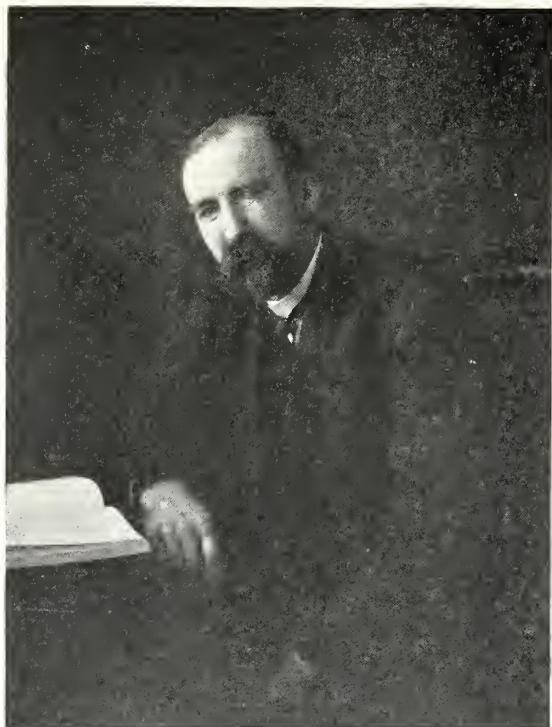
PAUL R. MORRISON

FIRST PRIZE

reproduction, — falls in simple lines. If the aigrette had been removed from the hair, the hands dropped to the sides, the one holding the fan being, with the fan, in the shadow, the picture would have been very pleasing.

Another picture shows an elderly gentleman with a flowing white beard. He is seated in an armchair with a hand resting on either arm. Holding the picture at a little distance, one sees three spots of light, on the face and the hands, respectively. The hands being on the same line and equally as well lighted as the face, the effect is of three points of light marking the three points of a triangle. Had a screen been interposed between the light and the hands, and the hands thus thrown into shadow, one would have had a good picture; but the strong light on both hands and face produce the triangle effect noticed.

A third picture is of a girl, with hair plainly dressed and the gown free from distracting ruf-



ERA GODLEY-ROLFE

SECOND PRIZE

fles and trimmings. The face is in profile, and the subject is placed directly against the background, which is apparently the same texture and color as the gown. The lighting is very subdued, and so even that the picture has not the slightest roundness, but looks like a flat fresco. The subject should have been placed far enough from the background to give the impression of atmosphere, and the lighting, while still kept subdued, should have been adjusted to give the suggestion of form, and not a figure cut from paper.

Another portrait is that of an old lady reading, — or supposed to be reading, — though it is very apparent that instead of reading she is holding a book and sitting for her picture. She is seated by a window in such a position that the light falls sharply on her face, hands, and the back of the book, while the reading matter is very much in the shadow. She holds the book in a rigid grasp and the free hand lies tightly closed in her lap. For a reading pose, the light should come from the back or from the side, and be so arranged that it falls on the pages of the book. An excellent example of a reading pose will be found in the *March Century* of the present year, in the picture of Gladstone. He sits with his back to the light, and is absorbed in his book, — *not* sitting for his picture. The hand which lies on his knee has the muscles relaxed, the fingers extended, and expresses repose in every line. The picture is an admirable example in every way for the amateur

to follow. It is reproduced from a painting, but there is no reason why one could not obtain similar effects and results with his camera, if he follows the same rules as the artist who made this portrait of the great Premier.

A study of a child reading or looking at a picture-book has the book so placed that it threatens to obscure the child altogether. It is a large book and occupies at least half of the picture, and being of glazed paper reflects the light strongly, with no detail on the page. The child's head is beautifully modeled, and if the artist will use a smaller book with yellow tinted leaves, and place it farther away from the camera, so it will not seem to be the principal object in the picture, he will obtain a charming portrait.

The common fault of portrait photographs is that the subject usually gives one the impression that he is sitting for his picture. The secret of a good portrait is the unconsciousness, or apparent unconsciousness, of the sitter; and if the amateur is clever, he will engage his subject in conversation foreign to picture taking and cause him to forget to pose.

The dress should be simple in style and some soft material that will fall in graceful lines. Combs and ornaments in the hair which catch the light should always be avoided. The lighting of the hands should be subdued and always be subordinate to the lighting of the face. Never try to arrange the hands. If their position does not seem pleasing, ask the sitter to move them, or to raise them slightly and drop them in the lap, letting the muscles relax. The hand should not be shut or the fingers doubled, for it gives a stubby look to even the most beautiful hand. If the subject is to hold a book, select a small one with cream-colored or time-stained leaves. A book with the shiny glazed surface now used in book-making, gives a strong high light where a high light is not desired.

The lighting of the face should be so adjusted that the lights and shadows melt into each other with no sharp lines between, making a proper gradation of lights and shadows.

Use the largest stop in the camera, focus sharply, then turn the lens forward a trifle, just enough to do away with the sharp focus.

If you wish to make a portrait which will be as attractive five years hence as now, then be sure that fashionable frills or furbelows be discarded and your subject dressed in some simple gown, and that the hair is not arranged in an exaggerated fashion.

We shall have, later in the year, another portrait competition, to discover if our members have profited by these few hints on portrait photography.

We congratulate all who took part in the competition on the good quality of their work. It is a truism that in a race not all can win. Some

must fall behind, but it does not follow that the unsuccessful ones may not win in another race. It is better to strive and not win, than never to attempt; and one's failures make very solid stepping-stones to success.

AWARDS IN PORTRAIT COMPETITION

FIRST prize, Paul R. Morrison; second prize, Eva Godley-Rolfe; third prize, Mary H. Mullen; fourth prize, E. P. Bailey.

Honorable Mention: Wayne C. Albee, E. P. Bailey, Charles G. Hass, O. S. Kennedy, Laurence Macomber, Frank S. Matsunra, Albert H. Moberg, Gail Philbrick, Cora Tilden, Mrs. E. E. Trumbull, Charles R. Tucker, C. M. Whitney, Emma L. Williams.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITION

SUBJECT for the April Competition, "Cloud Study." Closes May 31.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: \$5.00 in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

SUBJECTS FOR COMPETITION

March. — "Still Life." Closes April 30.

April. — "Cloud Study." Closes May 31.

May. — "Animal Study." Closes June 30.

June. — "A Country Road." Closes July 31.

ON MOUNTING PHOTOGRAPHS

HAVING finished a print in the tone most suitable, the next important step is the selecting of a mount which shall either harmonize or contrast agreeably with the tone of the print. The beginner, and often, too, the experienced amateur, buys the mounts kept in stock by the dealer in photographic supplies. Then, too, as if paper were a precious article which must be used with strictest economy, the mount chosen is one that allows the narrowest possible margin when the print is mounted thereon.

If one must buy the ready-made mounts, let him pass by the gilded and ornamented cards, and select plain ones of creamy white or soft gray, and large enough to allow of at least 1½ inch margin all around, 2 inches is better, and for some prints 3 and 4 inches may be used with advantage to the picture.

Better still than the plain cards are the cover papers which manufacturers supply for pamphlets



MARY H. MULLEN

THIRD PRIZE

and similar purposes. This paper is not only much more artistic than any of the commercial mounts, but it is also very much cheaper. There is a wide range of both color and texture from which to choose, and one can select the paper which shall be to his picture what the setting is to the jewel. The size of the sheets vary, but one can buy them as large as 22 x 28; and if he wishes, he may have them cut by the dealer in any size or sizes he desires.

Sometimes a print looks better if mounted behind a "cut-out," — an opening large enough to show the picture and small enough to cut off or hide all the objectionable portions. A very pleasing paper for these cut-outs when the print is in sepia or warm brown, is the antique hand-made paper in a soft cream tone. It comes in sheets 19 x 28, and the sides have deckle edges, and these at the sides of the mount make an artistic finish. The cut-out and print are both mounted on a sheet of paper showing an inch margin, and of a dark tone. The cut-out should be made nearer the top of the page than the bottom, the rule being to allow the same space at top and sides, leaving a wider margin at the bottom of the picture.

Besides the American papers one can find many beautiful papers among the imported, especially in the Japanese. These latter papers are beautiful both in color and texture, and have a very tough fiber which admits of much rough handling without tearing or crumpling. The Japanese vellum is an ideal mount for some prints, and the Japanese tissue with a backing of heavier paper in the same



E. P. BAILEY

FOURTH PRIZE

tone is one of the most artistic mounts one could use.

The covers of the PHOTO ERA are made from these cover papers, as are also the mounts inserted in the *édition de luxe*. The Mittineague Paper Company, whose advertisement appears elsewhere, puts out as beautiful papers for photo-mounts as one could possibly desire. The coloring, as well as the texture of the paper, is very fine. The very names are fascinating, and reading them over one's imagination pictures at once their possibilities as artistic mountings for his prints. The Rhododendron covers come in both plate and antique finish, the colors being Mist Gray, Cloud Gray, Storm Gray, Black Granite, Havel Brown, Olivette, Neapolitan Blue, and Jacqueminot Red. Two specially artistic papers are the Sepia Antique and Sepia Telanian, and the Chocolate Antique and Telanian. The old Strathmore Parchment covers come in antique and in ripple finish, the colors being white, grays, blues, buff, and browns. A paper which appeals to every photo-artist is the Old Cloister covers, the colors being Franciscan Gray, Trappist Brown, Cathedral Blue, Monastery Buff, and Friars Black.

The amateur will be delighted with the cover papers if he has never used them; and if he has, he will be glad to know of the new and beautiful tones and grades.

A word ought to be said about the placing of the

print on the mount. It should never be placed exactly in the middle for the peculiarity of the eye is to give the impression that the lower edge is narrower than the upper, when it is really exactly the same width. Book binders cater to this trick of the eyes, and the back of a book has the decoration placed nearer the top of the back than the bottom. Sometimes a print looks well placed very high up on the mount, and sometimes, though rarely, it shows to better advantage placed at one side. The style and composition determine in great measure the proper placing of the print.

ANSWERS TO CORRESPONDENTS

MARY MULLEN. — There is no objection to working on a print sent in for competition. There is always more or less remedying of defects to be done both in negatives and in finished prints, and all legitimate finishing is expected.

HAROLD MOREY. — A subchloride is a chloride which contains more of the base of which it is composed than it does of the acid. A molecule of silver chloride contains one atom of silver and one atom of chlorine. A subchloride of silver would contain twice as much silver as the chloride; hence, the subchloride contains one atom of chlorine and two atoms of silver.

GRACE D. — To change the color of blue-prints to violet tones, dip them in a solution of one ounce household ammonia and one quart of water, until they have turned the desired tone. Dry without further washing.

H. G. L. — The self-toning paper which you say is badly discolored will bleach out in the fixing bath. The discoloration does not seem to affect its printing qualities, though it is not so easy to judge of the progress of the printing.

BERTHA B. — You will find it greatly to your advantage in making photographs to study the principles of art. Read Van Dyke's "Art for Art's Sake" and "How to Judge a Picture," Dow's "Composition," Robinson's "Pictorial Effect in Photography," and *Practical Photographer*, No. 12, "Pictorial Composition."

FOR SALE

A MEMBER of the Guild wishes to sell a Telephoto Cycle Poco D, 5 x 7, with automatic shutter planatograph lens, two plate-holders, and sole leather case, in condition equal to new, at a material reduction from the price when purchased. The camera has all attachments, including reversible back and rising front. Address A. D. Thompson, Palmer, Mass.

PHOTO ERA THE AMERICAN JOURNAL OF PHOTOGRAPHY

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AIMÉE DUPONT
LOUISE HOMER



PHOTO ERA

The American Journal of Photography

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MAY, 1905

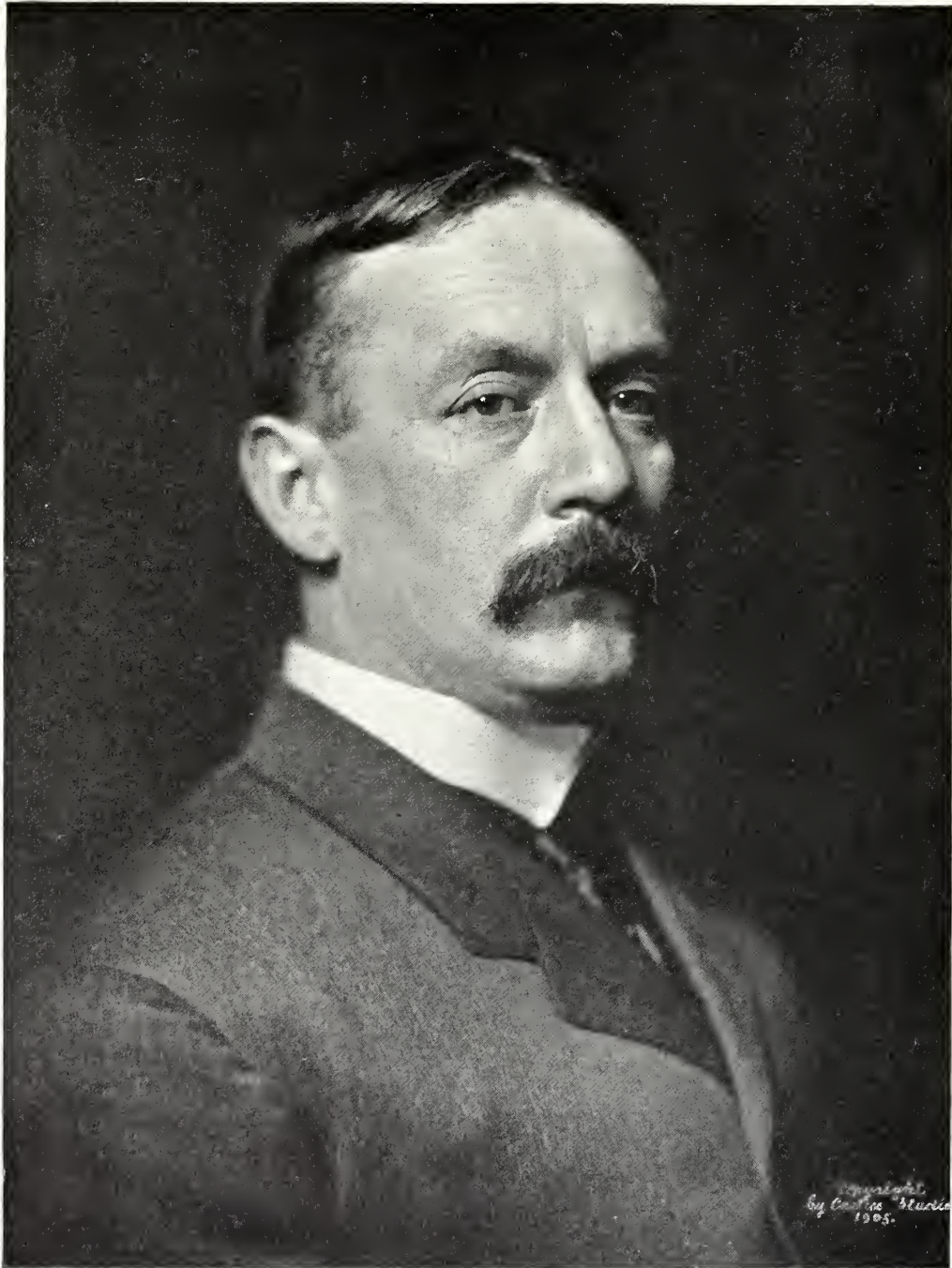
NUMBER 5

AMERICAN MUSICAL GENIUS AS INTERPRETED BY PHOTOGRAPHY

WILFRED A. FRENCH, A.M.

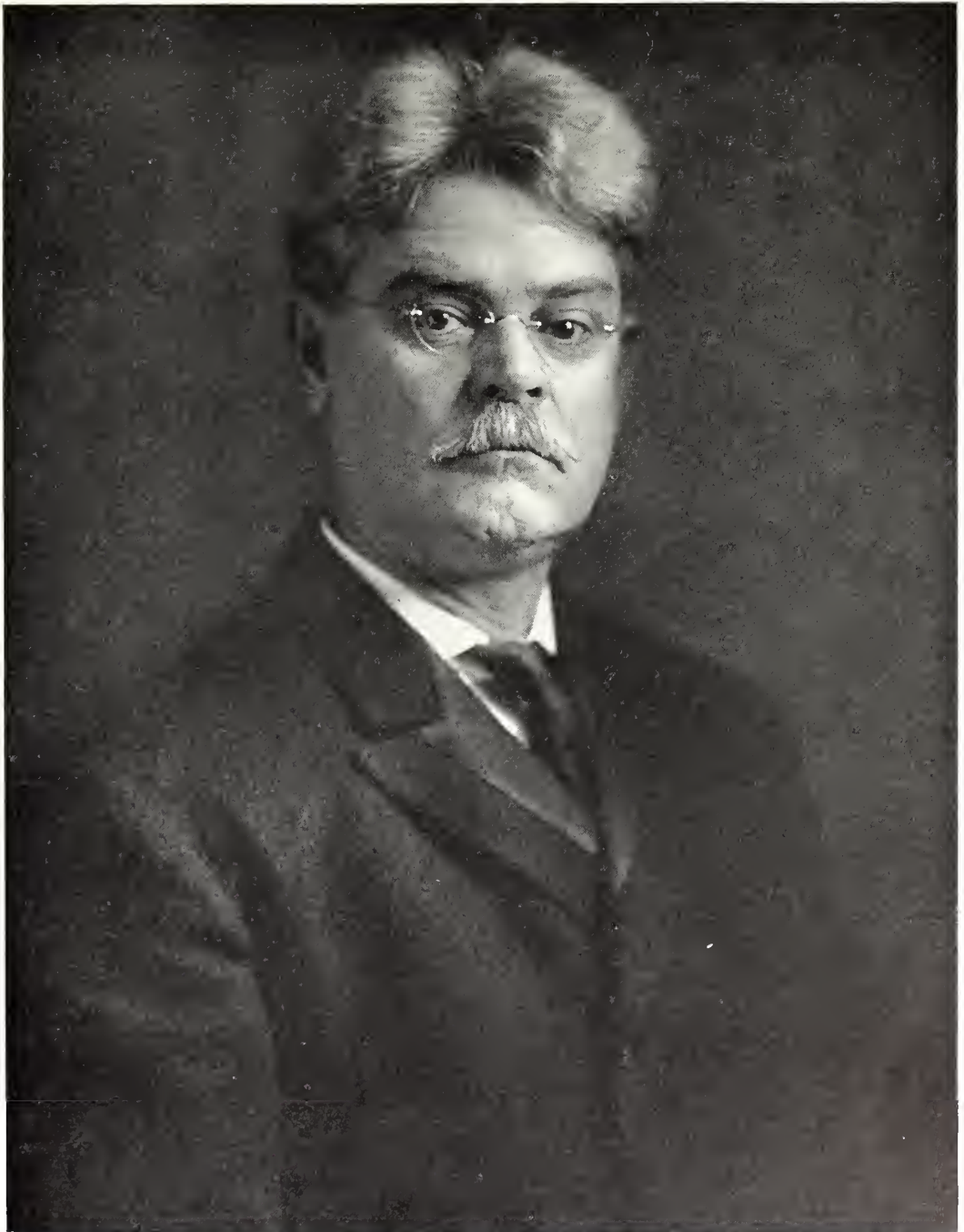
For over four centuries the portrait painter has held undisputed sway in the interpretation of character as expressed by the human face. We refer to the masterly creations of Velasquez, Leonardo, Michelangelo, Rembrandt, Hals, Reynolds and Sargent — to cite a few of the brighter lights in portraiture — rather than to the apocryphical achievements of an Apelles of a brilliant, but extremely remote, period in the history of art. The thought that the brush or chisel might, some day, be surpassed by another vehicle of artistic expression, probably never entered even the most visionary of minds. The effect produced by the first announcement of Daguerre's discovery — astonishment, wonder, incredulity — is history. The daguerreotype is still believed by many to be the greatest of all discoveries and we certainly hold a similar view. Not only that, but we were among the first to proclaim photography, as developed during the past few years, one of the fine arts and a rival of painting as a medium of artistic expression. The day has long since passed, when photography could, with truth, be designated as a mere mechanical art; and he who would preach that doctrine will find no believers in an enlightened community. The fact may as well be emphasized here, as anywhere, that the photographer has entered the arena of art, prepared to measure lances with the painter and the sculptor. If a painter, jealous of the inroads photography has made upon his preserves, desires to score a point against photography by calling attention to the purely mechanical work of a certain class of photographers, he displays either ignorance or prejudice. We ourselves have little sympathy with that kind of photography; it is only the art-side of photography that we recognize and encourage. One might be led to believe, therefore, that the quality of the painters' art is uniformly excellent and that the painter arrogated to himself all that is artistically worthy. It would be folly to assert that no bad pictures are being painted. Very little of all that is produced in the realm of art — poetry, music, painting and photography — deserves serious consideration, *i.e.*, from an artistic point of view. The difficulty with some of our friends of the brush is, that they constantly move within narrow limits, devoting themselves to their art with such ardor as to lose sight of the development and application of another art — photography — which, recently, one of their number was pleased to call "nothing but a mechanical art." To him, we fancy, photography must appear like a boggy. In truth, there is a class of painters which views with apprehension and dread the wonderful growth of photography and its general recognition, in Europe as well as America, as a fine art, and firmly refuse even to discuss the subject. Do they remember to have heard the old saying "There are none so blind as those that will not see"?

On the other hand, there are painters, who, like the late J. Wells Champney, have cordially welcomed photography as a sister art. They even practice it, realizing that, like painting, photography not only has a mechanical side, but, as a means of expressing character and beauty, has even greater possibilities. What the palette and the brush is to the painter, the camera, lens and plate are to the photographer. There are the apparatus and the materials! They need but the guiding hand of an artist to produce a thing of lasting joy — a masterpiece. There



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is, thus, a close resemblance between the fine arts, for the same art-principles underlie them all. Conception of design, beauty, form, composition, unity, balance, — all these are elements which must be present in a production, if it deserve to be considered as a work of art. Not until then can its creator be regarded as an artist, be he poet, painter, dramatist, musician or whatever be his means of artistic expression. This class, therefore, includes the photographer, whose work, as developed during the last few years, is ranked next to painting. The development alluded to here has no reference to the mechanical process, but to the artistic activity of the men and women who use photography merely as a vehicle of artistic expression.

Recognizing the close relationship of art and music, the entertainment committee of the New England Photographers' Association, at its annual convention in Boston, 1902, substituted an orchestral concert, with eminent soloists assisting, for the usual dramatic or *al fresco* entertainment, thereby bringing the sister arts still nearer together. The results of that happy and harmonious blending of art and music, as exemplified on that occasion — still fresh in the minds of those who were present — proved to be of an enduring and far-reaching character. In listening, under ideal conditions, to standard musical compositions, splendidly performed, the photographers must have felt the inspiring and quickening influence of the language of their sister art, creative, as well as interpretive. As a source of mere pleasure to the senses, the concert was a most emphatic success; indeed, the photographers expressed their enthusiastic delight not only in the usual manner, but, in analyzing the aesthetic quality of the music, evidenced intelligent appreciation of the very elements they were striving to infuse into their own work.

The musician, too, received valuable impressions regarding an art but little understood by him. He recognized in the large array of artistic productions a constructive process and a pliable means of artistic expression, based upon the same principles which he systematically applies to his own



MEREDITH JANVIER
HAROLD RANDOLPH



MORRIS BURKE PARKINSON
FRANCIS ROGERS

art, creative or executive. He discovered that, by photography, a person, imbued with true artistic instincts, possessed of an artistic temperament and having suitable technical proficiency, could give rein to his artistic spirit and poetic fancy and play to his imagination and taste, in the production of pictures upon which he might stamp his individuality. He obtained a clearer understanding of the elements that unite poetry, art and music. Photography, then, was not a mere mechanical art — a trade, as was maintained by an artist-member of his club; it was a fine art, pure and simple.

As for ourselves, we were stimulated by the desire to bring the photographic art closer home to the musician, acquainting him with the artistic possibilities of an art of which he knew but little. To carry out this idea in a manner original with us, we conceived the idea of using the musician as a model, with the photographer as the portraitist, suggesting to the latter that he employ every means in his power to secure a likeness that should be natural, characteristic and true. Finding the portraitist open to suggestions and glad to cooperate with us in the consummation of the plan, we sent a direct invitation to native-born American musicians, of merit and distinction, to sit for their portraits to eminent photographic artists selected by us for this purpose, at the same time informing them of the nature of our enterprise.

Our preference, as distinctly expressed to the artists to whom we entrusted this important task, was for pictures executed in the advanced school of photographic art, which lends itself quite readily to breadth and simplicity of treatment and the rendering of atmosphere and modeling. The results fully realized our expectations. We did not underrate the capability of our artists. They have produced pictures which are not only, in the ordinary sense, speaking likenesses, but rise high above the level of artistic excellence to which the camera has already attained. They are quite in a class by themselves — in an atmosphere wholly their own. These pictures are of



CONLY STUDIO
MARY HISSEM DE MOSS





GARO
LILLIAN NORDICA





GARO

MARIE NICHOLS

permanent value; not of the vague, frail, tentative sort, but of honest, hearty, solid workmanship, proclaiming vitality and power, and calculated to stand the test of time. They show how admirably the artist has understood the inner man, has appreciated, seized and reproduced the powers of intellect, character and imagination to a degree, quite on a plane with the best that is attainable by the painter and which must be honored by the term — interpretation. In the case of the conductor, who leads large choral or orchestral forces to sublime heights of musical expression, we are forced to admire the intellectual strength, magnetic personality, decision, authority and imaginative qualities, so essential to the attainment of artistic success. The portrait of the singer — another exemplar of musical genius, be it an interpreter of heroic music or one of classic



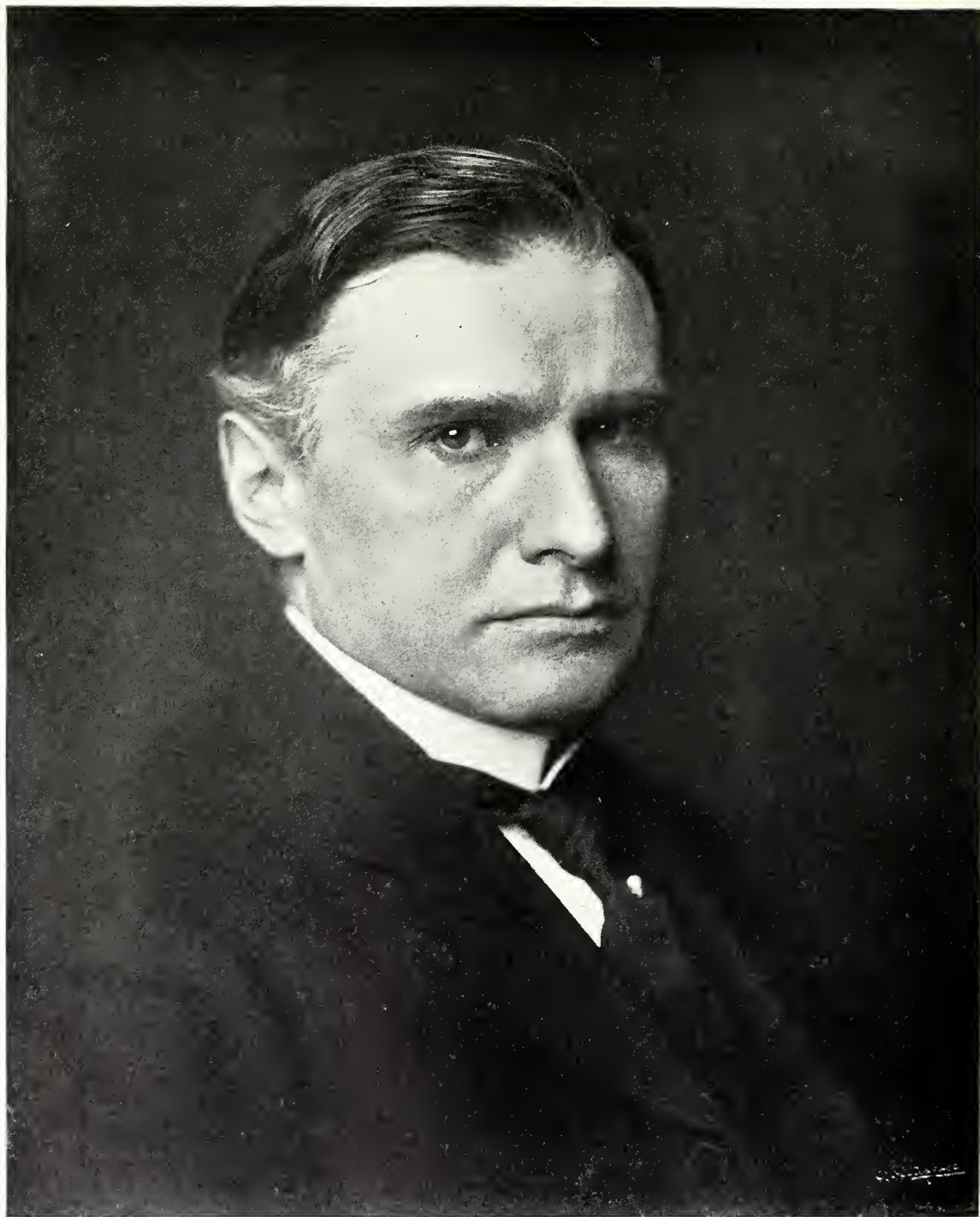
ZAIDA BEN YUSUF

OLIVE MEAD 612

song — speaks to us of dignity and repose, lofty purpose and genial disposition, which we love to associate with the personality of the lyric artist. When we gaze upon the honest and kindly presentment of the composer — the tone-poet and architect of the musical structure — we imagine that we are looking into his very soul. There is no concealment, no posing for effect. His very thoughts are ours for the moment, but we cannot follow him in his flights of fancy, into the realm of melody, a world beyond our reach — unknown to us.

In forming this aggregation of American musical genius, we have confined ourselves to living and native-born Americans who have, in one way or another, rendered conspicuous service to the development of musical art in this country. Preference is given to those who are identified with American musical life of to-day, thus refuting the statement, so frequently made, that America derives all its best art from Europe. To be sure there is always a class of people which patronizes a foreign product, regardless of quality, to the detriment of the native article. This is also true of works of art and even the artists themselves; and, in competing with transitory foreigners — favored by the glamour of eccentricity — the American often has a hard struggle for existence, unless afforded opportunities on equal terms by a fair-minded impresario. Fortunately the appreciation of the American musician, both as creator and interpreter, is growing fast, at home as well as abroad, and we esteem it a privilege to be able to present to an intelligent and art-loving public, in a noble series of portraits, the representatives of American musical art.

Thus, the hearty and sympathetic cooperation of two artists — the photographer and



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J. C. STRAUSS
ERNEST RICHARD KROEGER



J. EDWARD ROSCH
CHARLES GALLOWAY

the musician — has resulted in an achievement of art-interpretation, never before equaled in this country, and it is with sincere pleasure that we offer it, in its present form, as a tribute to American musical greatness of a period, which may well be regarded as an important and permanent step towards the formation of a national school of music. In referring individually to the distinguished subjects of our portraits, as we now shall, it would be foreign to the nature of this article to dwell at length on their merits or their achievements. We shall, therefore, mention only the most important facts connected with each artist, by reason of which he or she has attained celebrity. But, successful as has been the task we set ourselves, it leaves much to be desired, for we are obliged to acknowledge our inability to secure portraits of several distinguished musicians of American birth, which would have enhanced the value of our collection very appreciably. Inaccessibility, or indifference to our project, is our excuse for not producing portraits of such notable artists as Maud Powell, Leonora Jackson, George Hamlin, Van der Stucken, Edith Walker, Emma Eames and David Bispham. With our esteemed friend Edward MacDowell it is simply a chronic case of aversion to the camera—seemingly his *bête noire*. This shyness, neither explicable nor excusable, is the cause of our inability to obtain the portrait of this distinguished pianist-composer.

JOHN KNOWLES PAINE — composer. Oratorio "St. Peter"; symphony in C minor, "Spring Symphony"; cantata "Nativity"; opera "Azara," etc. Since 1875 professor of music at Harvard University, Cambridge, Massachusetts.

HORATIO WILLIAM PARKER — composer. Oratorios, "Hora Novissima," "Saint Christopher" and "The Wanderer's Psalm"; symphony in C minor; cantata "The Holy Child," etc. Since 1894 professor of music at Yale University, New Haven, Connecticut.

GEORGE WHITEFIELD CHADWICK — composer. Overtures of "Rip Van Winkle,"



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ISABELLE BOUTON

"Thalia" and "Melpomene"; "Judith," a lyric drama; symphony No. 3 in F major; choral works "Phoenix Expirans," "Lily Nymph," "Columbian Ode," etc. Since 1897 director of New England Conservatory, Boston, Massachusetts.

MRS. H. H. A. BEACH — composer and pianist. "Gaelic Symphony"; concerto for pianoforte and orchestra; mass in E flat; sonata for piano and violin; "Festival Jubilate" for chorus and orchestra, etc. As a pianist she possesses uncommon gifts and takes high rank.

ARTHUR FOOTE — composer. For piano, "Five Poems (after Omar Khayyam)"; quartet in C for strings; quintet in A minor for piano and strings; orchestral suite in D minor; "Farewell to Hiawatha," for baritone solo, male chorus and orchestra, etc. Organist at First Unitarian Church, Boston, Massachusetts.

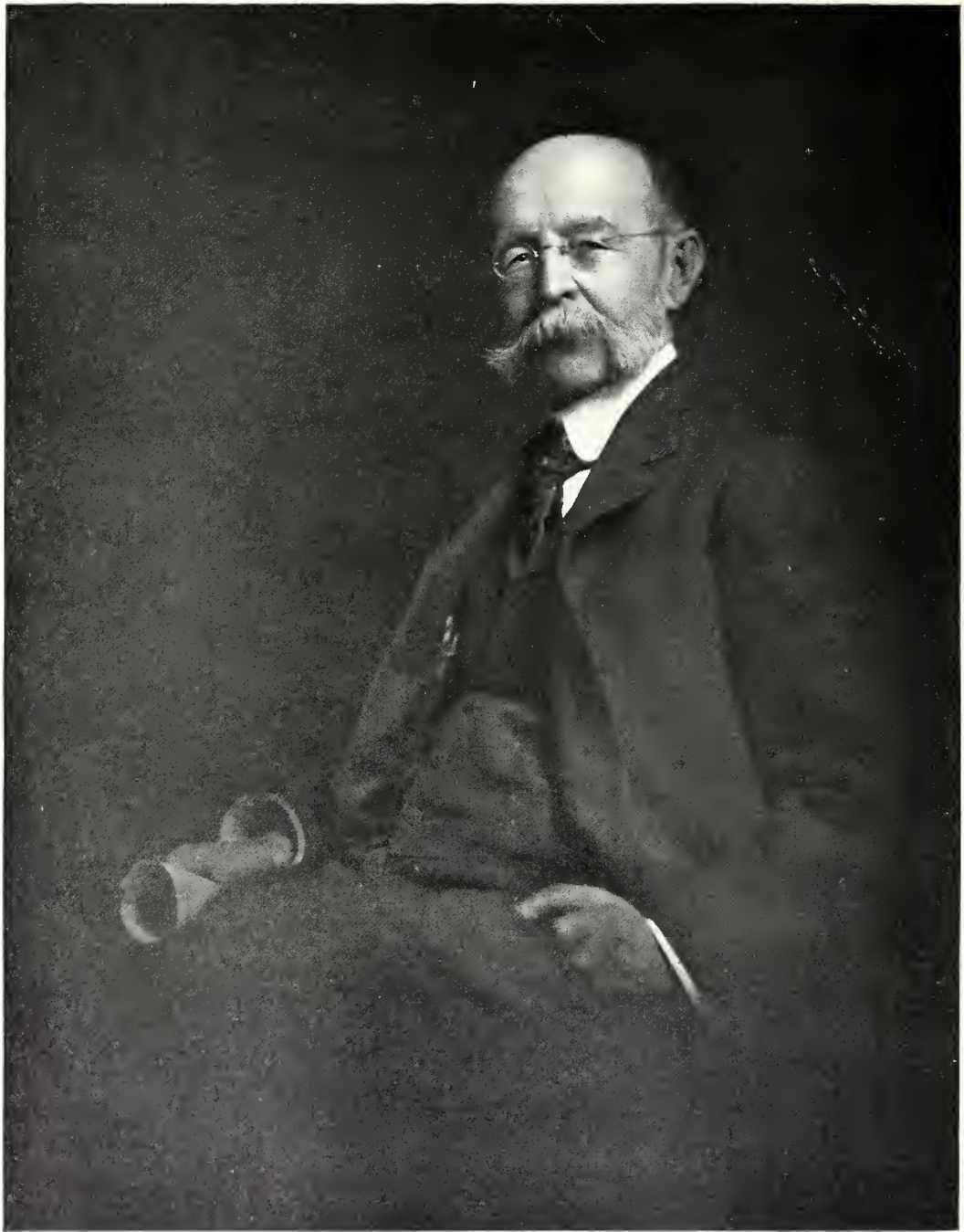
MADAME LILLIAN NORDICA — dramatic soprano. Principal operatic rôles — Marguerite, Leonora, Aida, Valentine, Elsa, Isolde, Bruennhilde, Kundry, La Gioconda.

MRS. LOUISE HOMER — dramatic contralto. Principal operatic rôles — Amneris, Fides, Orpheus, Laura, Venus, Ortrud.

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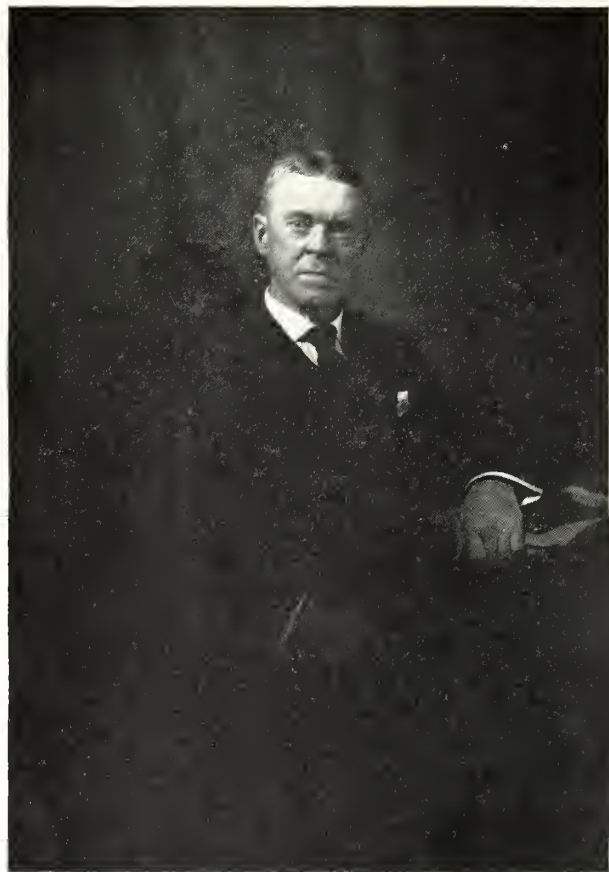
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THEODORE VAN YORX — dramatic tenor. Opera, concert and oratorio singer. Soloist at St. Thomas' Episcopal Church, New York City.

FRANCIS ROGERS — baritone. Oratorio and concert singer and successful interpreter of German *Lieder*. Solo bass at the South Dutch Reformed Church, New York City.

EMIL MOLLENHAUER — conductor, both orchestral and choral. Conductor of the Handel and Haydn Society and Apollo Club, Boston, Massachusetts; the Newburyport Choral Union; the Salem Oratorio Society; the Brockton Choral Union and the Boston Festival Orchestra. Also an accomplished violinist and pianist.

WALTER DAMROSCH — conductor and composer. Conductor of the New York Symphony Orchestra. Composed "Scarlet Letter" and "Cyrano de Bergerac" (operas); the Manila Te Deum; piano and violin sonatas; songs, etc.

CLARENCE EDDY — concert organist. Author of "The Church and Concert Organist" and "The Organ in Church."

CHARLES GALLOWAY — church and concert organist. Organist and director of the



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music at St. Peter's Episcopal Church and also at the Scottish Rite Cathedral, and conductor of the Apollo Club, St. Louis, Missouri.

BENJAMIN J. LANG — organist, pianist and conductor. Conductor of the Cecilia Society and organist of King's Chapel, Boston, Massachusetts. Also pianist of brilliant attainments.

WALLACE GOODRICH — organist and conductor. Organist of Trinity Church and conductor of the Choral Art Society, Boston. Also conductor of the Worcester Music Festivals and instructor at the New England Conservatory of Music, Boston, Massachusetts.

ERNEST RICHARD KROEGER — pianist, composer and lecturer. Composer of orchestral suite "Lalla Rookh" (based on Thomas Moore's poem) and numerous orchestral and pianoforte pieces and songs. Probably the best-equipped lecturer on musical topics in the United States. Director of the Kroeger School of Music at St. Louis, Missouri.

HAROLD RANDOLPH — pianist and, since 1898, director of the Peabody Conservatory of Music, Baltimore, Maryland.

GEORGE W. PROCTOR — pianist. Instructor of piano at the New England Conservatory of Music, Boston, Massachusetts.

MISS MARIE NICHOLS — concert violinist.

MISS OLIVE MEAD — concert violinist, also founder and director of the string quartet bearing her name.

MAX BENDIX — concert violinist and conductor. Was especially engaged to act as concertmaster at the Wagner performances at the Metropolitan Opera House in New York this season. Was one of the conductors of the St. Louis exposition orchestra, filling a similar position at the World's Fair in Chicago.



CHARLES WESLEY HEARN

MRS. H. H. A. BEACH

MOONLIGHT PHOTOGRAPHY

JOHN BOYD

Night photography is a fascinating pursuit, but yet it is not successfully followed by many. It has apparently too many intricacies for the average amateur, and the professional will not take it up because it does not "pay." Of the many forms of night photography there is none more abused than "moonlight" scenes, which in the main are nothing more than daylight underexposures in a new guise, but nevertheless sailing under false colors. There is really no need that we should have to palm off on our friends or the public these fraudulent products of ours, when with a little trouble we can produce the genuine article in all its beauty, and then, if we desire to have our work criticized, by even the severest of critics, there will be nothing found in it to condemn us.

I do not propose to ignore the attaining of any special result by a skilful combination, such as can be practised by those who have true artistic training, or by those who would emulate these leaders, and to these latter I would speak of how these results are reached.

Moonlight photographs may be said to consist of two classes: one where the view is taken by the light of the queen of night, the other including her majesty as part of the scene. It is possible to make pictures by Luna's light that closely resemble that obtained by Sol's reflected rays; but if we only want daylight effects, there is actually no use wasting good time by exposing our plates at night, for at such a time we want pictures that will speak for themselves.



RUDOLF EICKEMEYER, JR.

LILLIAN BLAUVELT

The lesson therefore that we wish to impart is how to take night pictures that will look like what we are accustomed to see when the sun sinks behind the horizon, and the moon shines in all her splendor, and I might as well add right here that he who is to enter this field of work will need to be blessed with lots of enthusiasm, unlimited patience, and a stock of good nature, — in fact, a friend aptly put it when he remarked that “plenty of patience and non-halation plates comprised the largest portion of his outfit.” A person may set up his camera anywhere in daylight, and not call forth remark; but let him bring it out after dark, and he will find that human beings are the most inquisitive animals of the many that inhabit the earth.

The requisites needed for photography by the light of the moon are few. Non-halation plates, as just stated, are indispensable, and if they are color corrected for yellow rays they form an ideal combination, and one that will prove equal to every requirement. A strong tripod, and a stay to clamp the legs, will prove a comfort if we have to set up on uneven ground or hard

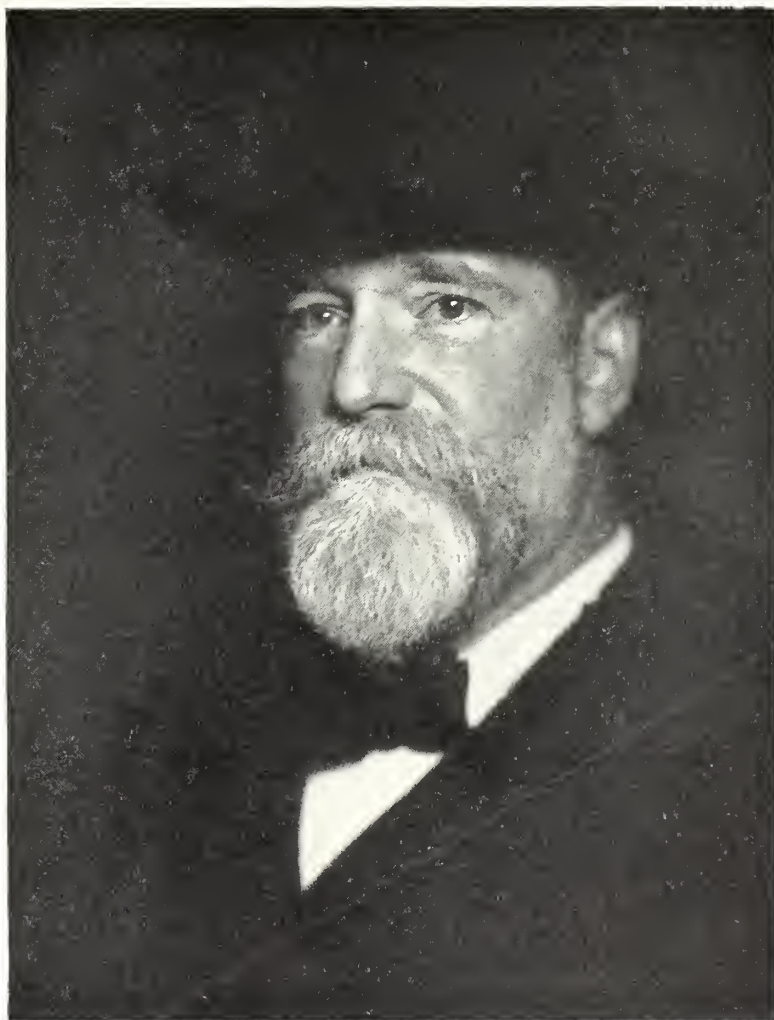


HOLLINGER & CO.

THEODORE VAN YORK

pavements. A lens of the longest focus for scenes that are to include the image of the moon is necessary to get a diameter that will accord with what the eye is accustomed to see. Any of the double lenses whose front and back combinations give twice the focal length of the combined series will answer every need.

We are now ready for work, and will begin at the easy end of the job. The moon is shining bright, and there is not a cloud to be seen. A long winding road up the distant hillside is as clearly defined as it would be at noon; the bridge across the creek at our feet throws its heavy shadows down into the depths of the water, but the railings are stereoscopically prominent in the slanting light. There is a fringe of bushes and an odd tree in the middle distance which breaks up the space in the rising ground. We have seen it often by daylight, but it has never appealed to us until now. We of course wish to picture it, endeavoring to portray the silvery effect and uniform softness that is apparent in every foot of it. The camera is set up, the focus obtained, and then corrected by the scale which every box should have on its baseboard. Use the swing-back to bring the foreground to a uniform focus with the distant hill, for in this work it is not expedient to stop down the lens to obtain definition. A fast plate is in the holder, the working aperture of the lens is f. 8, and we give an exposure of twenty minutes. Should the scene have been one with a heavy foreground, the time might readily be increased to forty or even sixty minutes, according to the amount of detail required.



PIRIE MACDONALD

CLARENCE EDDY

We shall next take up the picturing of the moon itself in a scene, and it were better for this that we choose a night when light clouds are fleeting across the sky. There are several ways of doing this, but only the easiest and best of them will be here explained. Let us first, however, consider the motion of the moon in relation to the earth, and learn to escape what many have obtained in their early attempts — an elongated streak, whose length increased with the exposure. We should know that the moon will travel its own diameter in slightly less than two minutes, and that the least motion allowable in our picture must not exceed $\frac{1}{150}$ of an inch, otherwise the sharpness will be “shivered” to a visible extent. The larger the image, the more the necessity for obtaining a true circle, free from perceptible motion, and those working with very long focus lenses, or large cameras, will needs bear this rule in mind.

The first plan is to make a double exposure in the following way: Choose a scene when the moon is shining brightly, and arrange it so that Luna is nearing the border of the view as seen on the ground glass, and moving towards the edge of the plate. Expose quickly for the moon alone, which for an image one fifth of an inch in diameter must not exceed five seconds; one eighth of an inch, not more than eight seconds, and so on. Close the shutter, and replace the slide, then wait until the moon has passed out of the field of view, then make the exposure



WILFRED A. FRENCH

BEETHOVEN'S BIRTHPLACE, BONN

on the scene, giving ten to thirty minutes with f. 8, according to the light and class of subject.

Another way produces splendid results, though the methods employed are partially untrue. During the daytime we make a half-timed negative of a pretty landscape, with masses of clouds surrounding the sun, using either films or plates, and when night comes on and the moon is in the same position in the heavens, another exposure is made, this time on a film, and with just enough time to give us an outline of the moon alone. The two negatives are now superimposed and printed together, the only care being to get the image of the moon in its proper place in the sky. The remainder of the moon negative ought to be free from any trace of image, and will be, if the exposure and development have been carried out correctly. The only justification there is for offering this plan is that it gives us a real moon, with of course the subservient parts illuminated by the orb of day.

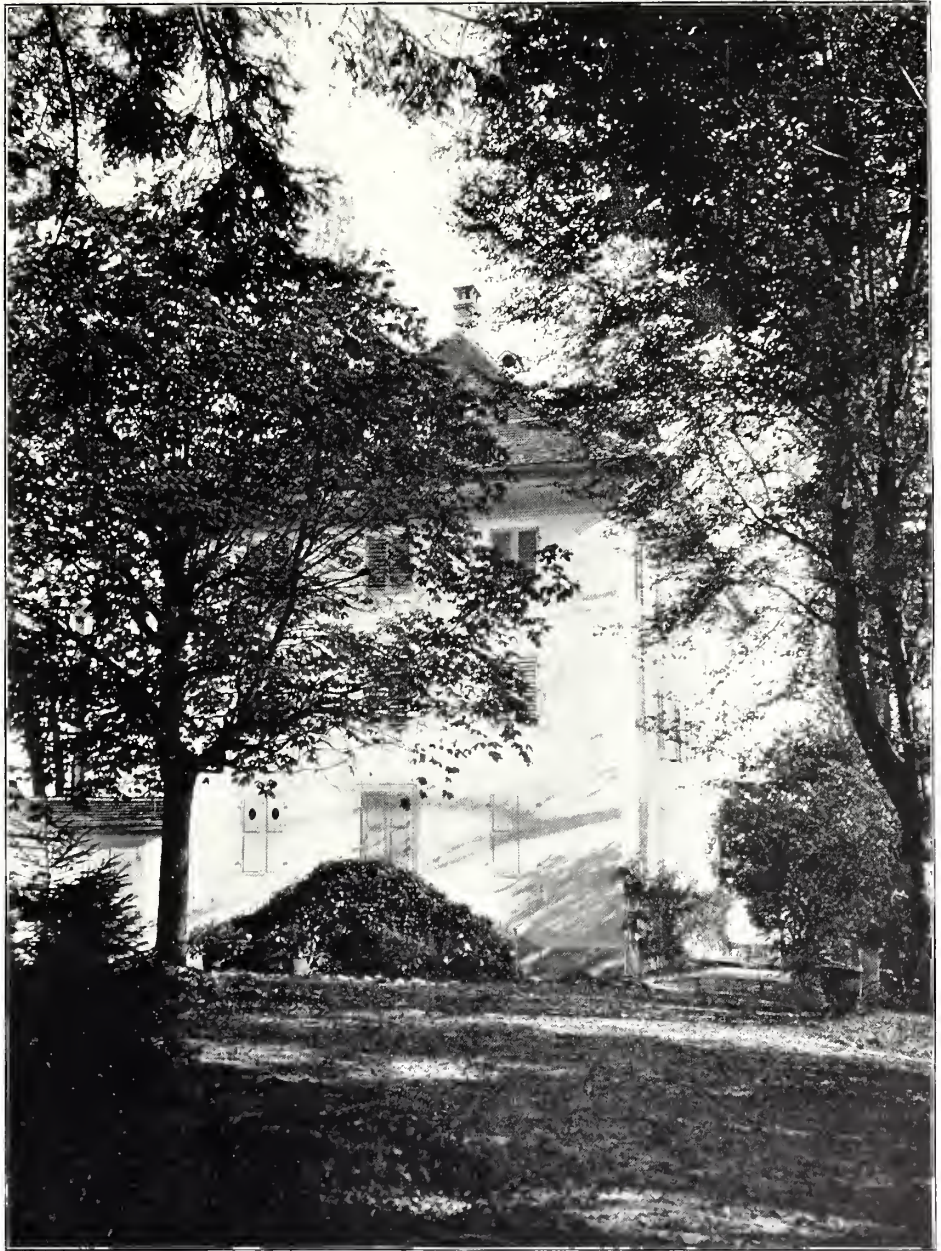
A further plan that will give realistic effects is to make a genuine moon exposure, and then stripping the film from the plate with hydrofluoric acid, cut out the moon and place it over the daylight negative in its proper place. In doing this, the transferred moon will be slightly enlarged, which is the object to be attained, as the worker will find in making negatives direct of the moon, old Luna will not appear as large in proportion on the plate, as the eye makes it in Nature; hence the necessity for a "doctoring," and thus correcting where our optical outfit is deficient. If the stripped film is dried and greased on to a plate, we can use this moon as a stock



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WILFRED A. FRENCH
HEAD OF BEETHOVEN





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WAGNER HOUSE, TRIBSCHEN

negative for printing in the heavenly orb on any of our night-made landscapes or other scenes.

In the making of pictures of the heavenly bodies, the photographer will run against a proposition that he may not hitherto have felt the need of mastering. I refer to the visual and chemical focus of these distant planets. Lens makers usually advertise their products as corrected in this respect, but not many of them, if any, will depict the celestial worlds sharply by a visual focusing on the ground glass, and there is no set rule that can be quoted which will answer for all sizes and makes of lenses, as they differ in proportion to the extent of their focal length, and amount of correction. The only way to find out is by making actual tests, and the most satisfactory method is to set the camera up with the longest focus lens in position, and bring one of



MRS. M. S. GAINES

the bright stars to the sharpest image possible on the screen. Put in a fast plate, and expose ten minutes; rack out the lens a quarter of an inch, and without moving the camera expose another ten minutes. Do this for six consecutive times, allowing say five minutes between each exposure, and marking on the bed of the camera the positions of each of the exposures. On development, you will readily see the difference between the image made by the visual focus and those of the five succeeding ones. Providing you have carried the experiments out sufficiently, one of the five will be your indicator for future work. Make a note of the distance the chemical focus extends beyond the visual, and you will have a sure guide with that particular lens when photographing any of the planets.

The development of plates exposed on any of these subjects calls for tentative methods. We must strive for softness, so that the existing contrasts may be modified as much as possible. A well-diluted pyro-soda solution will best harmonize with most makes of plates, and the manufacturer's formula weakened with double quantity of water will enable us to control the results to the greatest possible degree.

It is doubtless apparent to all that the sky in the negative of these night scenes must be almost free from density, otherwise we lose the effect we are seeking. This can be attained in development by painting over the sky part, as soon as the image can be seen, with a solution of bromide of potassium, which restrains further action. Local reduction can also be done with



PEAR BLOSSOMS

any of the well-known agents, but a better way, if carefully done, is to take the negative after drying, and gently rub the dense portions with a tuft of absorbent cotton moistened occasionally with alcohol. This is one of the easiest ways of reducing the density and should be tried by all who are unacquainted with its efficacy.

The printing may be done on platinum, or any of the development papers, which give black and white results. There used to be on the market a green albumenized paper which produced moonlight effects in the most realistic manner, but I have not seen or heard of any being offered for some time. If the worker is in a position to procure any, he ought to do it; if not, let him try making a carbon, which can be had in suitable colors, and he will get an effect that will surely satisfy.

The instructions here offered may appear elaborate, and even impossible to the tyro, but in practice they are as simple as any of the better-known departments, and only want a little care in execution to produce the most exquisite examples one can have by photography.

It is a new field amongst the masses, and is well worth delving into, as it opens up possibilities undreamed of by the diurnal worker.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

FIFTH PAPER — INTENSIFICATION AND REDUCTION

1. *Purpose of Intensification and Reduction.* — Intensification and reduction are two after-processes for improving the printing quality of negatives. When plate, exposure, and development have been brought into complete working harmony with each other, a perfect negative results, in which all the gradations of light and shade in the object photographed are proportionately represented by corresponding gradations of density. After a little practical experience this will probably happen in nineteen out of twenty cases, but the twentieth requires some one of the after-processes which this paper describes. Experienced photographers frequently make miscalculations at some stage in the making of the negative, such as carrying development too far or stopping it too soon, and when it is dry they discover that it is a little too strong or too weak, too dense or too thin, and find a satisfactory remedy in intensification or reduction.

2. *What is Intensification?* — Intensification is the process of increasing the printing density of a negative, in order to produce a more brilliant print, or to secure a greater amount of contrast or detail. The problem is to strengthen the general density and add to the contrasts of the image if possible. As the negative image is composed of particles of metallic silver, the ideal way would seem to be to add more particles of silver to those already forming the image. This method, however, presents a number of difficulties in manipulation, besides the fact that the salts of silver have a tendency to stain the gelatine film. Therefore methods are usually employed by means of which the metallic silver of the image is changed to some compound which, by its greater opacity, offers more resistance to the light than did the silver, and thus the purpose in view is effected. Mercuric chloride is without doubt the most satisfactory and reliable means of performing this process. Intensification consists in converting the metallic silver of the image into a double salt, a chloride of silver and mercury, by means of mercuric chloride, and the reduction of that salt to the metallic state by abstracting the chlorine with the aid of a ferrous oxalate developer. The practical result is that the original silver image is increased by almost double its weight of mercury, the opacity of this image of silver and mercury combined being much greater than that of the original silver image. This process has the advantage that it may be repeated as often as desired to get the required amount of opacity.

3. *Kinds of Negatives Improved by Intensification.* — Intensification is at best only a makeshift to secure a good negative from a poor one; and if it is possible to make another exposure and get a good negative, the results will be enough better to amply reward the worker. This applies equally well in cases requiring reduction, although reduction is perhaps on the whole the more satisfactory of the two. However, when a second negative cannot be made, the poor one may be intensified so as to yield a comparatively good print. There are three kinds of negatives which may be greatly improved by intensification.

First of all are the negatives which were correctly exposed, but through an error were underdeveloped. Such negatives have plenty of detail, unless the degree of underdevelopment was extreme, but there is almost no contrast or density whatever, the shadows are quite clear, the image is flat and shows but little blackness at any point. The worker may have negatives which, although correctly timed, received so little development that the shadows are lacking in detail and appear to be but little more than clear glass. This is to quite an extent only an apparent lack of detail; sufficient detail is there if it can only be brought out. The ferrous oxalate intensifier is especially adapted to this class of work as it is in itself a developer, and redevelopment is exactly what is needed to bring out the latent detail and strengthen the whole negative.

Next are the overexposed negatives which were removed from the developer at an early stage because fog had begun to make its appearance. These negatives, the result of overexposure and underdevelopment, somewhat resemble underdeveloped negatives, being full of detail, but weak or thin in density, with little contrast between the high lights and shadows. The prints



LAURENCE MACOMBER

CLOISTER, SAN JUAN CAPISTRANO

from them are soft and flat, without contrast, snap, or brilliancy. Intensification works wonders in such cases where there is sufficient detail and only contrast and opacity or density are required. When the fog has been removed by a clearing bath, the intensifying solution begins its work; and as its action is greatest on the metallic silver of the image, the shadows containing very little silver are not greatly affected as are the high lights, which soon assume considerable opacity, thereby producing the desired contrast.

The third and last kind are negatives which have been underexposed. Such negatives are benefited the least of any by the processes of intensification now known to photographic science. It may be safely stated that there is no satisfactory remedy for underexposure except the making of another new negative. If this cannot be done, the ferrous oxalate blackening solution recommended in this paper will accomplish more improvement in the underexposed negative than the majority of the other intensifiers now used. The reason for this is that the high lights of such a negative are somewhat strong while the shadows are clear and without sufficient detail; moreover, the ferrous oxalate solution is in itself a strong developer, and if the negative was but slightly underexposed, it will develop out more detail in the shadows as well as build up the opacity, so that this detail may not be lost in printing. If the negative was greatly underexposed, there is no hope for it; detail cannot be forced where there is none.

4. *Preparation of Negatives.* — Negatives which have been developed, fixed, washed,

and dried before intensification seem to have better contrasts than if intensified directly after washing as then none of the delicate gradations of the shadows are lost, as is the case before they have been dried. In reduction and in intensification it is essential to success that the negative should be free from hypo, chemical stains, or grease, and the necessity for thorough preparation of the negative cannot be too strongly impressed upon the worker.

Therefore, when about to intensify or reduce a negative, make sure first of all that it is thoroughly fixed. Should there be any doubt on this point, it will be well to soak the negative in water for a few minutes to soften the film and then refix it as directed in the paper on development, being especially careful to give it a thorough washing in running water to entirely remove all traces of hypo. This is important, as hypo in the film will cause stains after intensification, the negative will turn yellow, and in time will be destroyed and useless. The best hypo-eliminator is a good stream of running water if the fixation has been thorough and complete. If a negative is known to have been thoroughly fixed, but not sufficiently washed, or if the amount of washing is unknown, it will be well to immerse in a five per cent solution of alum for ten minutes just previous to intensification or reduction. This solution may be prepared by dissolving 91 grains of alum in about 2 ounces of water and adding water to make 4 ounces.

It is also advisable that negatives should be free from the fog or stain caused by overexposure or overdevelopment if it is possible to make them so. If not extreme, these troubles may be eliminated by immersing the negative in the following clearing bath: Thiocarbamide, 150 grains; citric acid, 75 grains; water, 16 ounces. Wash the negative when thoroughly cleared.

An almost entire reduction of the silver in the plate emulsion sometimes occurs upon developing a greatly overexposed plate, and the result is fog and a very dense image. In such cases the following clearing bath will be of service. The negative should remain in this solution until it is clear, and should then be washed as with the clearing bath above: Water, 10 ounces; ferrous sulphate, $1\frac{1}{2}$ ounces; alum, $\frac{1}{2}$ ounce; sulphuric acid, 20 minims.

Iridescent stains may be removed by rubbing gently with a tuft of absorbent cotton wetted in wood alcohol. Silver stains on the negative are not so easily removed, but they should be, if it is all possible to do so. They have the appearance of rusty colored spots, and the following is one of the best baths to remove them: Sodium hyposulphite, 2 ounces; sodium phosphate, 10 grains; lead nitrate, $\frac{1}{2}$ ounce. Dissolve in 12 ounces of water and then add, alum, $\frac{1}{2}$ ounce. Set the bath aside to clear before using, and when ready decant off the clear solution. After use, the negative should be wiped off with a tuft of absorbent cotton and well washed. The solution may be kept in a tightly corked bottle and used several times.

5. *The Bleaching Solution.* — With the preliminary preparation of the negative carefully attended to, the worker may give his attention to the actual processes in hand. First of all a bleaching solution must be prepared: Warm water, 10 ounces; hydrochloric acid, 20 minims; ammonium chloride, 227 grains; mercuric chloride, 227 grains. Mercuric chloride is not very soluble in water, but when mixed with an equal weight of ammonium chloride, it becomes much more so. It does not keep well in solution if exposed to light for any length of time; but if hydrochloric acid is used as directed in the formula, it may be kept in the dark room or a closet and used repeatedly until it fails to bleach the negative in a reasonable time. The hydrochloric acid also prevents the powerful hardening action of mercuric chloride on the gelatine of the film, and tends to prevent stains, but too much may induce frilling. In compounding this solution be sure to do so in the order given above, and do not add the mercuric chloride except in powdered form. Label the bottle "Poison" and set it away to cool before use. Mercuric chloride is a corrosive poison and the fingers should be kept out of the solution as much as possible and thoroughly washed after each immersion.

6. *The Blackening Solution.* — To compound the blackening solution two saturated solutions are required, which must be kept separate in tightly corked bottles and mixed just before they are needed for use. The blackening solution itself should only be used for such negatives as are to be intensified at the same time; it cannot be used repeatedly like the bleaching solution.



GEORGE ALEXANDER

ROSES

First prepare a saturated solution of ferrous sulphate; that is, dissolve as much of the ferrous sulphate as the water used will take up. Then add about three drops of sulphuric acid per ounce of ferrous sulphate used. Ferrous sulphate readily changes to a ferric salt by oxidation if exposed to air or water, but the addition of the acid hinders this change. Now prepare in a similar manner a saturated solution of potassium oxalate and to this add about three drops of oxalic acid per ounce of potassium oxalate used. The blackening solution is composed of: Potassium oxalate (saturated solution), 5 ounces; ferrous sulphate (saturated solution), 1 ounce.

The worker may not understand why this blackening solution has been referred to in a previous paragraph as a ferrous oxalate developer when to all appearances there is no such chemical in its composition. Ferrous oxalate is insoluble in water so that a solution cannot be made in the ordinary way, but the salt is soluble in a strong solution of potassium oxalate. For this reason it is always prepared by pouring a solution of ferrous sulphate into a solution of potassium oxalate. This operation must not be reversed, for if the potassium oxalate solution is poured into the ferrous sulphate solution, there is danger that the ferrous oxalate formed by the reaction may be precipitated. In chemistry it is a good general rule that it is easier to keep a chemical in solution than it is to get it there, although it may be readily soluble in certain liquids.

7. *The Process of Intensification.* — This process should be carried on in a subdued light; the dark-room lamp with an orange glass instead of the usual ruby furnishes an admirable light for the purpose. When the negative to be intensified is thoroughly prepared, lay it in a clean tray film side up and flow over it a quantity of the bleaching solution sufficient to cover it well. If the negative was a good one and no preparation was necessary previous to intensification, it should be soaked in clean water for a few minutes before immersing in the bleaching solution, until the film becomes softened. During bleaching rock the tray gently as during development. In a minute or two the image will begin to turn white. This change will continue until the image is bleached through to the glass on the under side of the film, and for uniform intensification throughout the negative it should be allowed to bleach until it is white through and



MITCHEL P. VUCASSOVICH

THE ORIENTAL EXPRESS

through. But the nature and extent of the intensification can be regulated to some degree by the amount of bleaching allowed. In portrait negatives, for instance, and elsewhere, it may be desirable to intensify the shadows more than the high lights. In such cases remove the negative from the bleaching solution as soon as the shadows have become whitened and wash it quickly to stop the action of the solution. A little experience will teach the beginner just when the process has been carried far enough and sufficient opacity has been secured. A moment's thought will also convince the worker that it is always the shadow portions of the negative which bleach first. This may be accounted for by the fact that the particles of silver composing those parts of the image, being fewer in number and more scattered, are much more easily attacked by the solution than the large masses of metallic silver forming the opacity of the high lights. When bleached sufficiently, wash the negative for half an hour in running water or in at least twelve changes of standing water, allowing it to soak about three minutes between each change. This washing must be done in the dark room, for the solution has formed a double salt of silver and mercury which is quite sensitive to light action. The washing completed, examine the negative before the orange light for a moment and observe the results up to this point. The metallic silver of the image has been converted into the light-sensitive salt, silver chloride; moreover, the image shows a marked increase of deposit due to the fact that mercurous chloride is associated with every atom of silver chloride, thus forming a double salt. Owing to the whiteness of the image, however, it is less opaque than the original, and its color must be changed by reducing the silver and mercury salt to a metallic state. In other words the negative has been restored to such a condition that it may be redeveloped and additional opacity secured by the presence of metallic mercury with the silver. Now lay the negative in a clean tray film side up and flow quickly over it a quantity



W. A. BOGER

ADIRONDACK LANDSCAPE

of the blackening solution sufficient to cover it well. Rock the tray gently as before and watch the change carefully by the orange light. The image will quickly blacken and gain density. When thoroughly blackened to the desired point remove the negative and wash and dry it the same as after ordinary development. If the desired amount of density has not been secured, the negative may be again bleached and blackened. In fact the whole process of intensification may be repeated until the required density is obtained.

8. *What is Reduction?* — Reduction is the process of reducing the printing density of negatives in order to diminish the printing time, or to remove excessive contrasts and harshness, or to bring out details hidden in dense opacity. Since the faults in these negatives are due to intense density of the image resulting from overexposure or overdevelopment, the process is in reality simply the removal of a portion of the metallic silver forming the image. Potassium ferricyanide and sodium hyposulphite are the best-known agents for performing this process, and, although many other methods are in common use, the theory of the working of them all is practically the same. With the chemicals mentioned, the insoluble metallic silver of the image is converted into a soluble salt — silver ferrocyanide — by the potassium ferricyanide, and is at once dissolved by the sodium hyposulphite so that it may be washed out of the film.

Reduction is usually spoken of under two heads, — general and local reduction. For general reduction the negative is immersed in a tray of the reducing solution and the reduction of the image takes place uniformly over all parts of the negative. Local reduction is the reduction of only a portion of the image, and is usually performed by soaking the negative in water until the film is soft and then applying the reducing solution with a soft camel's-hair brush to the parts of the negative to be reduced.

9. *Kinds of Negatives Improved by Reduction.* — Three kinds of negatives may be improved by reduction, and the first of these is the correctly exposed negative which has been overdeveloped. Such a negative has plenty of detail and the contrasts are strong, but it is very dark in color and dense, so that the printing time is quite long. Moreover, the prints from it are

hard and harsh, especially if it is a portrait negative, when the softness and modeling of the features are nearly lost, and if overdevelopment has been extreme, some of the detail in the high lights may be obscured in dense opacity. General reduction will yield an almost perfect negative in cases of this kind.

Then there is the slightly overexposed negative which has received full development in a normal developer. A negative of this kind has plenty of detail and a fair amount of contrast, but is too dense and requires a long time in printing. General reduction will be of great benefit. If overexposure was extreme, however, this process will not be of so much avail, for there would be no contrast and a flat, insipid negative would result in any case. Prints from such negatives are best made on some of the development papers, such as Velox or Cyko, by methods for producing contrast which will be treated later in this series of papers.

Finally there is the underexposed negative which I referred to under the subject of intensification, stating that it was benefited the least of any by that process. Let me repeat that a greatly underexposed negative is useless; do not bother with it. If underexposure was only slight, intensification will bring out all the latent detail there may be in the shadows and build up the opacity of the shadow portions of the negative. But the high lights which were strong and perhaps harsh at first, probably due to prolonged development in the hope of forcing out more detail in the shadows, have received a corresponding increase in opacity, making them very dense, and the contrast between high lights and shadows which was already too great has been altered hardly at all. Thus my statement that such negatives are benefited the least of any by intensification. If, however, the high lights are reduced locally after intensification, a much better, softer negative can be secured, and I have in my collection fair prints made from what at first seemed hopeless cases merely by applying first one process and then the other. If the negative is still too contrasty, it should be printed on some of the development papers by methods for producing softness which will be treated in a succeeding paper of this series.

10. *Preparation of the Negative.* — All that has been stated concerning the preparation of negatives previous to intensification applies to preparation for reduction, and it is essential that the worker should give just as careful attention to this detail of the latter process as to the former.

11. *Reduction with Potassium Ferricyanide.* — Prepare a ten per cent solution of sodium hyposulphite by dissolving 1 ounce of the salt in about 8 ounces of water and then adding enough more water to make 10 ounces of solution. In a similar way make a ten per cent solution of potassium ferricyanide; and as this solution is affected by light, it should be kept in a bottle of amber color or wrapped in opaque paper and kept in a dark place. Mark this bottle "Poison" and do not mix with the hypo solution until just before using. Reduction is best carried on in daylight, as the progress of the process can be more accurately estimated, but the light must be subdued. Never try to do this work near a window. When the negative to be reduced has been soaked for at least half an hour in water to soften the film, place it in a clean tray, film side up. Now pour into a graduate a quantity of the hypo solution sufficient to cover the negative, and to this add enough of the ferricyanide solution to make it a light straw color. A slight variation in the amount has practically no effect except upon the rapidity with which the process proceeds. Pour the solution over the negative and rock the tray gently, as in development, to secure uniform action on all parts of the film. The image will soon be seen to lose density, and the negative should be examined occasionally by transmitted light, being careful each time to rinse it in water to stop reduction and prevent streaks while holding it up for examination. When sufficiently reduced, wash the negative in running water the same as if it had just been developed, and set it away to dry. If at any time the reducer seems exhausted, add a little more of the ferricyanide solution; if it turns green, it is useless. Throw it away after use, as it will not keep for another time. This process is for negatives which have been overdeveloped or overexposed and need general reduction over the whole surface of the film.

12. *Reduction with Ammonium Persulphate.* — There is also another class of negatives



DR. F. DETLEFSEN

THE BOAT RACE

which, although requiring general reduction as a result of overdevelopment, are too contrasty and need reduction of the high lights more than of the shadows. To this class may be added negatives which were slightly underexposed and have been overdeveloped to force out plenty of detail. These negatives are contrasty and hard, and harsh oftentimes even in the shadows. Reduction with potassium ferricyanide would destroy most of the detail in the shadows, and the amount of contrast would remain about the same. For these and all other negatives which would be benefited by a decrease of contrast an ammonium persulphate reducer should be used. This salt has the peculiar property of dissolving away the denser masses of metallic silver in apparently greater proportion than it dissolves the thinner layers which form the details of the half-tones and shadows, so that the high lights may be reduced considerably with but slight change in the shadows. In this way harsh contrasts may be greatly modified. The only difference between this and the ferricyanide process is in the chemicals themselves. The reducer should be made fresh each time just before using, as it does not keep well in solution. Immerse the well-soaked negative in a solution of ammonium persulphate,—15 grains to each ounce of water,—and when sufficiently reduced, stop the action by removal to a tray containing a ten per cent solution of sodium sulphite, made by dissolving 1 ounce of the salt in 8 ounces of water and then adding enough water to make 10 ounces of solution. The negative should remain in this solution one minute and no longer, or stain and hardness may result. Remove, and wash in the usual manner.

13. *Local Reduction.* — Local intensification has not been mentioned in this paper because



W. H. PARTRIDGE

THE PARTHENON

it is at best a very delicate process requiring great skill, and even then it is seldom entirely satisfactory. Underexposed negatives which need intensification only in the shadows are best given a general intensification and then a sort of selective reduction with ammonium persulphate as just suggested. It will sometimes happen, however, that the contrast between shadows and high lights, and the density of those high lights are both so great that ammonium persulphate cannot fully remedy the defect; the result would be too great density of the high lights and too great reduction of the shadows. Local reduction in such cases is the last resort. It may be employed to advantage on many negatives to rectify such errors as overexposed skies, which would otherwise print as simply white paper when a cloud effect was hidden in the density; overexposed water, which would print in a similar manner but really contained beautiful ripples; white garments in portraiture, lacking detail of light and shade due to overexposure or overdevelopment; halation around windows in interior views, and many other cases too numerous to mention. The negative to be reduced locally should be soaked in water until the film is soft; and matters will be greatly facilitated if it then be soaked for a few minutes in a plain hypo fixing bath. Meantime prepare in a graduate a small quantity of the potassium ferricyanide reducer. Now with a soft camel's-hair brush apply the reducer with rapid, sweeping strokes where needed, and a few seconds after each application rinse the plate in a deep dish of clean water. This prolongs the process, it is true, but it insures more even reduction. This operation may be repeated until sufficient reduction has been obtained. The solution must be applied very evenly or some portions will be reduced more than others. It is probable that the worker will not be successful the first time this method is attempted, for it requires skill and practice. Amateur workers as a rule have plenty of spoiled negatives, and it is well to experiment on some of these first. A little practice will make local reduction an easy matter. When sufficiently reduced, the negative should be washed as usual.



A. A. GLEASON

BREAKING WAVES

(*Note.*)—Through an unfortunate error, several plates were omitted from Table II in the March number. We therefore reprint this table here in its complete form, and trust that all interested will use the present table instead of that originally printed.

Table II.—This table gives ratios which are to be used in Table III. The first vertical column gives the comparative speeds of different brands of plates. The first horizontal column gives the comparative exposures under different conditions of atmosphere. Numbers at the intersection of vertical and horizontal columns give a ratio taking into consideration both speed of plate and condition of atmosphere.

COMPARATIVE SPEEDS OF PLATES AND FILMS	CONDITION OF ATMOSPHERE			
	Intense sunlight.	Sun obscured, but bright lighting.	Sun obscured, dull.	Heavy clouds, very dull.
Seed's S. 27, Cramer's Crown and Trichromatic, Hammer's Special Red Label, Standard Imperial Portrait, Stanley's S. 50, Eastman's N. C. Film and Kodoid Plate, Premo Film Pack. (These films, although listed in this class, are a trifle slower than the plates named above, and full exposure must be given.)	1	2	3	4
Seed's S. 26x, L. Orthochromatic, C. Orthochromatic, Non-halation and Non-halation Orthochromatic; Cramer's Banner X, Instantaneous Isochromatic and Instantaneous Isochromatic Non-halation; Hammer's Extra Fast, Aurora Non-halation and Orthochromatic Non-halation; Standard Extra and Orthonon; R. O. C. Plate, Eastman's Extra Rapid, New Record Extra Rapid, Ansco Film.	$1\frac{1}{4}$	$2\frac{1}{2}$	4	5
Seed's S. 26, Carbutt's Eclipse and Eclipse Jr., New Record Orthochromatic.	$1\frac{1}{2}$	3	5	6
Cramer's Medium Isochromatic and Non-halation S. C.; Carbutt's Polychromatic D., Non-halation, Negative Film S. 27 and Ortho Portrait S. 27; Hammer's Fast.	2	4	6	8
Seed's S. 23, Cramer's Anchor, Carbutt's Polychromatic C.	$2\frac{1}{2}$	5	8	10
Hammer's Slow, Carbutt's Ortho Portrait S. 23, Agfa Isola.	4	8	12	16
Cramer's Slow Isochromatic.	8	16	24	32



FEDORA E. D. BROWN

EASTER LILIES

WHERE THE LILIES LED

E. DRUSILLE FORD

“How didst thou learn the path?” the angel asked
A fair-haired child, whose feet had found the way,
Within the realms where reigns supernal day;
“The path which wiser ones, unconscious, passed?”

“I followed where the lilies led,” he said;
“For, knowst thou not, where’er the Master trod,
These sweet, white things spring upward from the sod.
What need for wisdom where the lilies led?”

PHOTOGRAPHING IN EUROPE

F. H. MCCLURE

It is with the liveliest anticipations of pleasure that one contemplates a tour of Europe. Armed with a compact camera and inspired by visions of temples, statues, paintings, and scenes hal-
lowed to the scholar and historian and immortalized in poesy and fable, one looks forward as eagerly and longingly as did the ancient Greek to the coming of the Olympiad.

Foreign faces, picturesque costumes, strange customs, magnificent scenery, enchanting shores with blue waters and gorgeous sunsets, treasures of antiquity, shrines of art and classic sources of joy and inspiration to the world,—it requires volumes to even name them, and who can resist their charms?

After a trip abroad, one is better able to judge and appreciate the beauties and blessings of his own country, and yet we occasionally hear an American say he prefers to see his own country first, which usually indicates indifference to everything that lies outside his own immediate interests.

With so much to see, accompanied by limited time and purse, the photographic tour under expert guidance furnishes the ideal way for the enthusiastic amateur to enjoy, study, and photograph the wonders and beauties of the Old World. The leader attends to the irksome and time-destroying duties of securing transportation and hotel accommodations, porters, carriages, and tickets of admission, and escorts the party in the shortest time and by the nearest route to the points of pictorial and historic interest. No time is wasted in looking for something to photograph or study. How many of us have wasted hours stalking the elusive photographic subject in a field that proved barren of results!

Craig Annan, the noted Scotch photographer, says the artistic temperament is especially sensitive to environment; stimulated by congenial companionship and free from petty delays of travel, the member of a photographic party is in fine condition to appreciate and perpetuate from the best point of view the fascinating subjects that are sure to appear in profusion, and often accomplishes more than he would by himself in twice the time.

The mental impressions received on a first visit to Europe are more important than the photographic ones, hence the camera and apparatus should be of the simplest and most compact form. Two of our party last year started out with bulky cameras which were abandoned in a few weeks for smaller ones.

For convenience and compactness, mechanical perfection, desirable size and correct relationship of width to height of image, I know of no camera on the market that equals the No. 3 A Folding Pocket Kodak.

The ubiquitous snap-shotter has long been a prolific source of unfavorable comment, but on a limited tour of the Old World, the man who can snap intelligently, and is familiar with his finder, his camera, and the laws of composition, will secure pictures where the one dependent on his ground glass will get nothing. This is especially true in Southern Europe, where anything photographic has such a fascination for the natives that constant watchfulness is required to prevent Young Italy from stealing into the foreground of an inspiring landscape. On several occasions, after intently studying the finder and selecting the best viewpoint, I pressed the button just in time to catch the grinning, dirty face of a breathless boy who had run a block to get into the picture. Often in the smaller Italian towns we were obliged to point the camera away from the subject we wanted, get the inquisitive rabble posed, then turn and snap in the opposite direction.

The developing machine is almost a necessity; it enables you to develop and classify your exposures as you go, to correct errors in exposure and lighting from day to day, and may be the means of saving your entire collection, as an officious foreign customs inspector may insist on unrolling your films, and the more anxious and agitated you appear the more liable he is to investigate. The machine allows great latitude in exposure, but to obtain platinum effects on

gaslight paper the negatives must be thin but full of gradation from the highest light to the deepest shadow. To obtain such a negative, the exposure must be carefully timed, as the developer and time of development are fixed, and a shutter with the smaller fractions of a second (1-25, 1-50, and 1-100) is desirable. Gaslight papers are deservedly growing in popularity, manufacturers are sparing no expense and vying with each other to improve their products, and the time is not distant when gaslight and bromide papers for the majority of work will leave the other papers as far behind as dry plates have the wet process. Personally, I prefer Rotox and Rotograph, on which beautiful and permanent sepias are produced by the well-known sepia toning tablets.

Local guides and hotel employees, like Patrick's wife, have a "fine sense of indiscrimination," are full of misinformation, and are perfectly willing to impart it to the unsuspecting tourist. When in Rome, three of us decided to take a trip independent of the party and consulted the hotel clerk, explaining that we wanted the ride outside the city walls which offered the greatest photographic possibilities. The affable clerk engaged a carriage, and for two hours we rode between walls twelve feet high. The driver explained every few minutes that just ahead was a *multo panoram* (grand panorama). At last we reached Monte Mario, which commands a magnificent view of Rome, but could have been reached in one third the time. The driver divided his fare with the hotel clerk and hailed us with a *multo panoram* whenever we passed him on the street.

It was a tree on Monte Mario that stirred Wordsworth to write:—

"The rescued Pine Tree, with its sky so bright,
And cloud-like beauty, rich in thoughts of home,
Death-parted friends and days too swift in flight,
Supplanted the whole majesty of Rome,
(Then first apparent from the Pincian Height)
Crowned with St. Peter's everlasting Dome."

THE SECOND AMERICAN PHOTOGRAPHIC SALON

As will be seen from the announcement in another place, pictures for the next Salon of the American Federation of Photographic Societies will have to run the gantlet in a fashion which photographs have never before experienced. In order to reduce the number of pictures uselessly shipped to New York, local committees will make a preliminary selection at various centers in this country and abroad. Pictures rejected by these committees still have the right of appeal, but it is to be presumed that only hopelessly inferior work will be thus refused, so that this right is not likely to be exercised to any extent. The survivors of this first ordeal are then to be passed upon by a jury of photographers. Presumably their work is solely to decide whether the pictures are entitled to be called photographs rather than etchings or wash-drawings, and to see that carelessly printed-in clouds are not hanging on the trees in the foreground. In other words, this jury should pass only on the technical excellence of the photographs submitted. Then, last trial of all, the certified photographs are to come before the jury of artists, who will decide whether the spark of divine fire that transforms a photograph into a picture is present. What passes these three trials should be indeed worthy of fame.

Frankly, although doubtless these precautions are taken to prevent the artists being again swamped with nine or eighteen thousand frames, the scheme is top-heavy and cumbersome. If both photographers and artists are to pass on the pictures, they should do so simultaneously. It is common comment that the painters admitted many pictures last winter which a jury of photographers would have rejected, and some of the pictures rejected by them have since been used to form loan exhibits with great satisfaction to the clubs which have exhibited them. It therefore seems to us that a mixed jury would give better results than the two juries as proposed.

EDITORIAL DEPARTMENT

But music tells
One secret of the world thro' which thou goest
To work with morning song, to rest with evening bells:
Life is in tune with harmony so deep
That when the notes are lowest
Thou still canst lay thee down in peace and sleep.
For God will not forget.

— HENRY VAN DYKE.

LOVE OF THE BEAUTIFUL

There is in the souls of most people a hunger and thirst for beauty, just as there is a physical hunger and thirst. Beauty and truth speak to their spirits through their senses and they cannot resist a sympathetic thought and feeling for harmony, whether expressed in color, form, or sound. Sometimes it is the perfume of mayflowers, the glory of an evening sky, or the concentrated harmony of sweet music; but in whatever form it comes to us, it is man's purest and most unselfish emotion. This love of the beautiful in nature and the power to see and feel this beauty is second only to the divine gift of expression or the power to create. For, after all, expression is necessary to life, since to express oneself rightly is to live and be happy in the highest sense. Some set it to music, others express it in words that burn and live; while others, yet, tell of their love in color, tones, and the subtlety of beautiful lines in pictures. They are the great artists of the world, the masters of music and poetry, of the lens and the brush, who create with the touch of genius what they see and feel.

When the true artist-photographer stands before his model, with his camera ready, somewhere within him stirs this sense of power to create. It is the spirit of art stirring within him. Then, under his hand there grows a picture of the vision before him, but the vision he has created will live on unchanging, while the other will fade and die. All that is best of his sitter he has rescued from the ruthless grasp of time and change. It is the triumph of art in photography.

INFLUENCE OF MUSIC

Sometimes the thing you see and feel you cannot express. You feel a sense of limitation. The invisible fetters that seem to bind you shut out from view the masterpiece you would make with your lens and plate. Then a musical genius, whom it is your good fortune to hear, voices your thoughts upon his violin. His music speaks to your soul. It breathes the spirit of beauty and romance and seems the very essence of eternal sunshine and peace. Every note is a caress, so tender and so eloquent that it expresses all you would put in your picture and more besides. The veil is removed and you see things with a clearer vision. Your soul blossoms like a rose under its sweet influence. The invisible power of the violin has stricken the fetters from your spirit, and it soars on the wings of genius. Out of its experience your mind begins to feel, select, arrange, and compose its material into pictures of wondrous charm. You have made the thing beautiful unconsciously because your inspiration has come from life.

PORTRAITURE

It is claimed by some that there has been no vitally new expression in portraiture in hundreds of years, and none in the painting of figures since Millet — followed far behind by Degas and Charles Keene. The new expression in landscape art has been foreseen dimly in some of Whistler's work, in Monet, in some of Winslow Homer's work, and here and there, tentatively, in that of other men. But the expression of the eternal movement in Nature and in all life, the poetry

and beauty of a new ideal in art, is still to come. This may be true of painting, but in photography, the new handmaid of art, we have a medium of genuine and effective art expression. We know that for years it was the reproach of the photograph that it was simply a copy, without skill and without art, without color, feeling, handling, or values, having the same relation to the real picture that the orchestrion has to the orchestra, or the graphophone to the human voice. That reproach, we submit, no longer remains. In the portraits of musical celebrities in this issue the artists have caught not only the likenesses, — this was to be expected, — but the character and the personality embodied in the individual sitters, with their varying moods, feelings, and expression.

In studying these portraits, which are not all made upon one model but differ as widely in their methods as works on the canvas, the individualism of the photographer, his temperament, his method of treatment, his artistic vision, and his mode of expressing himself are as apparent as if he had worked with tubes or paint-box. In this connection the question naturally arises, Will not the camera some day, in the hands of a master, produce a new ideal in art portraiture? Like electricity in the scientific world, photography is the coming agency in the artistic world. It offers the solution of the problem of combining the useful and the beautiful.

BEETHOVEN AND WAGNER

An event of no little importance is now engaging the attention of the musical world — the one hundredth anniversary of the first performance of the "Eroica" Symphony by Beethoven, which is being quietly, but fittingly, observed. It is with pleasure, therefore, that we are able to acquaint our readers, most of whom, it is safe to assert, are music lovers, with two pictures associated with the greatest of symphonists and never before published, viz., the birthplace and a bronze portrait of Beethoven. A description of the former will be found below. The portrait — the head done in bronze and resting on a square block of black marble — is by the eminent Austrian sculptor Wollek, and was exhibited at the German National Art Exhibition at Dusseldorf in 1902, where it was purchased by Mr. Wilfred A. French of the PHOTO ERA.

It would be manifestly unfair to institute comparisons between it and the numerous existing monuments erected, with all due reverence, to the memory of the master musician. In the first place each of these has its individual merits, quite apart from the attempt by the artist to produce an exact likeness. The imposing monument by Professor Zumbusch in Vienna, by far the most elaborate ever erected to a musical genius — unless it be the Wagner monument at Berlin — and the excellent portrait figures in Bonn and Boston, do not even assume to express any of the facial characteristics of this immortal genius. Klinger's sitting Olympian figure of the peerless composer, while ambitious, but strangely incongruous, in design, makes a strong appeal to the artistic sense, but fails to satisfy the music lover searching the features for marks of the great soul within. It seems to have been left to another artist — Wollek — to perpetuate the expressive countenance of that wonderful, creative genius. After several years of intelligent and enthusiastic study, and largely aided by the death-mask preserved in the Beethoven Museum at Bonn, Wollek has given us a portrait representing the strong, rugged, but highly sensitive nature of the man — a work full of power, imagination, and, withal, singularly fascinating. One of his strongest features, the wonderfully expressive chin, has been rendered with remarkable fidelity. Oddly enough, this facial peculiarity is noticeable in the portrait of one of our own musicians, illustrated in the current issue of the PHOTO ERA, whose readings of Beethoven's music are highly esteemed for their great strength, consistency and beauty. It will undoubtedly be of great interest to thousands of music lovers and admirers of Beethoven all over the country, to see this counterfeit presentment of the features of one of the greatest of the modern masters in music.

The Beethoven House, at Bonn, Germany, in which Ludwig van Beethoven (1770-1827) was born, is now fitted up as a museum, in which numerous portraits of the master, his family and his contemporaries, as well as his piano, quartet instruments, ear-trumpets, scores, letters and death-mask are exhibited. The chamber in which the great tone-poet first saw the light of day is indicated

by the quaint dormer window at the right of the picture. The house itself, one of the oldest in Bonn, still retains its original aspect. Engravings and lithographs of this historical landmark are sold by the custodian, consequently no photographs of the house are allowed to be taken. For this reason the author of our picture was compelled to secure it surreptitiously. Resorting to strategy, and after serious and apparently insurmountable difficulties, he succeeded in carrying away a precious souvenir of Beethoven's birthplace — a well-timed plate.

The Wagner Villa at Tribschen, on the shore of Lake Lucerne. Wagner settled in Tribschen, near Lucerne, after he had been forced to leave Munich, owing to the jealousy and opposition aroused by his friendship with King Ludwig of Bavaria. Wagner's friends, the Wesendoncks, placed their Lucerne villa at his disposal; and there, in comparative quiet and peace, he completed the scores of "Die Meistersinger" and the "Ring des Nibelungen." Here he also composed the "Kaisermarsch" and "Siegfried Idyll," and wrote his famous volume "Beethoven," as a memorial of the one hundredth anniversary of the great master's birthday in 1870. Wagner remained here six years, 1866-72, practically an exile from his native land. The villa, a plain, square structure, is delightfully situated near Lucerne, in view of beautiful scenery, and is a conspicuous object in the landscape as seen from passing steamers.

A HISTORICAL HOUSE IN DANGER

It was only last month that we published a picture of the birthplace of Paul Revere, stating that it was one of the few historical houses connected with his famous ride which are still standing in Boston. It is now to be torn down unless a sufficient sum of money can be raised to purchase it. The house has been for over fifty years one of the historical shrines to which pilgrims from all parts of the world have come. There has been little financial profit to the owner in these visits, and the march of improvement in North Square and the deterioration in value of the structure itself make its further existence almost impossible under the old conditions. The Twentieth Century Club hopes to save the house, and at the head of the movement are Governor Douglas, Lieutenant Governor Guild, Mayor Collins, General Appleton, and many others.

To carry out the project \$17,000 is considered sufficient to buy the property and restore it to first-class condition. Then, of course, the need of an endowment fund will be felt, and a sum as large again will be needed to keep the house in shape. The maintenance of the house as a monument to Paul Revere would provide a most fitting memorial in his honor. Relics of the patriot would find a resting-place here, and it could be made a Revere museum as well as an interesting landmark.

The PHOTO ERA will be very glad to receive and acknowledge contributions for saving the house, and will turn them over to the proper authorities.

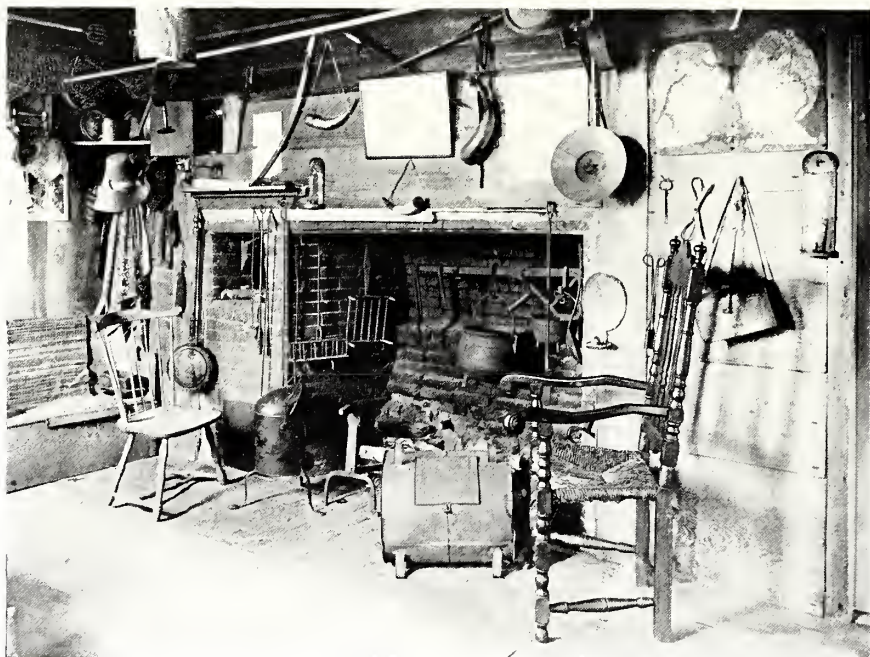
NECROLOGY

News comes to us as we are closing our forms of the unexpected death of Edward W. Newcomb, editor of the *Photo-American*. He will be sadly missed from the literary ranks of the photographic profession, and still more by those who had the pleasure of his personal acquaintance. Mr. Newcomb was a man of great artistic ability. He was versed in drawing, painting, music, and writing, although he had never had instruction in any of these subjects. His literary style was cheerful and personal, and his chatty columns will be much missed from the magazines. Mr. Newcomb was responsible for the general adoption of the backed plate, having sedulously inculcated its use, and also invented a convenient commercial backing. He had also introduced several much-used photographic chemical preparations.

We have also to chronicle the death of Edward Wuestner, who was well known for many years in connection with the manufacture of dry plates. Of latter years he has been traveling for manufacturers of card mounts.

THE ROUND ROBIN GUILD

*Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner.
Membership may be obtained by sending name and address to the PHOTO ERA.*



C. M. WHITNEY

FIRST PRIZE—GRANDFATHER'S KITCHEN

WHAT an addition to that volume of epigrammatic sayings might not Boswell have preserved for us, if photography had only flourished in Dr. Johnson's time. The "anfractuosities of the human mind," on which the good doctor was so fond of dwelling, find their fullest expression when a subject is placed before the camera.

"With what a compelled face a woman sits
While she is being drawn. I have noted divers
Either to feign smiles, or to suck in the lips
To have a little mouth; ruffle the cheeks
To have the dimple seen, and so disorder
The face with affectation, at next sitting
It has not been the same. I have known others
Have lost the entire fashion of the face
In half an hour's sitting."

Thus wrote — five centuries ago — that shrewd observer, John Webster.

Human nature repeats itself more often than does history. The same faults and follies that characterized the men and women of long past ages reappear in their descendants. Especially does the possessor of dimples still wish "to have the dimples seen," and smouldering vanity kindles into flame when one places himself before the

camera. The present-day subject desires an artist with the genius of that famous Grecian painter, Apelles, who knew how to "ennoble a likeness." If there are twentieth-century Oliver Cromwells who wish to have every personal blemish appear in a likeness, they are yet to be heard from. We all have ideals of ourselves which we hope and expect to see brought out in our portraits.

No matter how often one sits for a picture there is a subtle difference in each portrait. An individual is possessed of an infinite variety of moods, and as a consequence of an indefinite variety of expressions. So each picture represents not the person truly, but some special mood present at the moment of the taking of his portrait.

"A picture is the past. Even ere its frame
Be gilt, who sate for it has ceased to be the same."

Phoebe Pyncheon, that interesting young woman in Hawthorne's romance, "The House of the Seven Gables," objected to sitting for a picture.

"Likenesses are so hard and stern," she said, "besides dodging away from the eye as if trying to escape altogether. They are conscious of look-



K. McM. TOWNER

THIRD PRIZE—INTERIOR

ing very unamiable, I suppose, and therefore hate to be seen."

Miss Pyncheon was speaking of the daguerreotype, and her comment that the likeness seemed to be "dodging away from the eye" is very trite and very clever, and well expresses the elusiveness of this special kind of portrait.

The artist to whom she addressed herself was obliged to acknowledge that most of his likenesses did look unamiable. The reason of this, he thinks, is because the originals who sat for the pictures were unamiable.

"There is a wonderful insight in heaven's broad sunshine," he affirms. "While we give it credit for depicting only the merest surface, it actually brings out the secret character which no painter would ever venture upon, even could he detect it. Here is a likeness," showing Miss Pyncheon a daguerreotype of a gentleman, "which I have taken over and over again, and still with no better results. . . . The original wears — to the world's eye — an exceedingly pleasant countenance indicative of benevolence, openness of heart, and other praiseworthy qualities. The sun tells quite another story, and will not be coaxed out of it after half a dozen patient attempts. Here we have the man, — sly, subtle, hard, imperious, and withal cold as ice."

We must surely agree with Holgrave that the sun is an impartial and a discerning Rembrandt, and not only likes to reproduce the lines of the face with unerring precision, but also seems to delight in revealing the secret sentiments and

passions of the heart. A close observer may trace in a picture made by the sun the virtues, the vices, the weakness, the strength, even the content or discontent of the original.

Truly it is the camera which holds the "mirror up to Nature" and secures an accurate reflection.

COPYING OLD DAGUERREOTYPES

THE amateur who wishes to turn an honest penny may find a remunerative employment in the copying of old daguerreotypes. It is a great knack to be able to obtain a good copy of one of these old-time pictures. As Phœbe Pyncheon says, "they seem to be dodging away from the eye as if trying to escape altogether," and this elusiveness is more manifest when striving to reform the image on the ground glass of the camera. It must be placed "just so," or there will be a reflection or a blank.

The daguerreotype should be removed from the case and the glass taken from over the metal. If the picture is then set directly opposite a window, preferably a north window, the light coming only from this window and all other excluded, one can usually get rid of all reflection and secure a clear image.

The plate should not be overexposed. The picture is so delicate that one is inclined to give more time than is necessary in order to obtain a sharp negative.

The utmost care should be taken never to touch the surface of the picture, as the slightest touch will cause the picture to tarnish. It should be



L. S. CLOUGH

SECOND PRIZE—ART GALLERY, CONCORD, N. H.

exposed to the air for as short a time as possible, and immediately bound up with the glass air tight. These precautions are absolutely necessary for the preservation of the image.

Use a developer that will force the shadows and retard the high lights,—that is, a developer that contains a chemical for giving detail in the shadows, and a chemical which will not give harsh high lights. Hydrochinon and eikonogen seem to meet this requirement as well if not better than almost any other developer.

The prints are more satisfactory if made on carbon paper, using a warm brown or sepia. Never use black or red tones.

Printed on carbon paper and framed in small oval or square frames in dull finished wood, the frame being not over a quarter of an inch in width, they become real art treasures.

From three to five dollars is the price which one should charge for reproducing in carbon an old daguerreotype.

A PICTORIAL INDEX

To one who does a great deal of printing, a pictorial index of his negatives will be a great assistance in choosing suitable pictures for special

kinds of work. These pictures may be blue-prints, or one may make gaslight prints, either process being a rapid way of making prints. While one would of course like, and should try to make a good print, still, if it is not just up to the standard, it will do for the index. When making prints from new negatives, one could use the spoiled or imperfect prints for the index. The pictures are mounted in a scrap-book in the order in which the negatives are made, and the number and title of the negative written under its respective print. A more satisfactory adjunct to one's photographic "impedimenta" would be hard to find. It is, as well, an index of one's progress and a guide to future work, for one must remember always that one makes progress by using his failures as stepping-stones to success.

ROUND ROBIN GUILD PHOTOGRAPHIC COMPETITION

SUBJECT for the May competition, "Animal Study." Closes June 30.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: \$5.00 in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

SUBJECTS FOR COMPETITION

April.—"Cloud Study." Closes May 31.

May.—"Animal Study." Closes June 30.

June.—"A Country Road." Closes July 31.

A COUNTRY ROAD

INTENDING competitors will notice that the subject for June is "A Country Road." One would think nothing could be more prosaic, but every highway which runs through our land has a character of its own, and more than all, many phases have been described by poets who have found inspiration in these "leafy lanes," the "dusty highways," the "zigzag paths," or the "winding woodland ways."

A glimpse of a road suggests so much, whether it clammers a mountain side or runs through sunny meadows; whether it leads us up flowery

banks where children gather nosegays, or slips away into the shadowy depth of the forest.

It is possible that our promised "era of good roads" may blot out all of our picturesque lanes and by-ways, and give us the straight and broad and ample road with none of the alluring turns and bends that now entice us forward, each new vista convincing us that it "is better further on." But until that time comes, the amateur will find plenty of material lying close about his way, and unless he himself lingers in the "primrose path of dalliance" he can make a most artistic collection of photographs of these "winding paths of emerald fire."

If the *Guider* will consult the January, 1904, number of the *PHOTO ERA*, he will find many alluring titles from which to select an appropriate and poetic name for his picture.

ANSWERS TO CORRESPONDENTS

MARY M. — Yes, all pictures not winning prizes or reserved for reproduction in the pages of the *PHOTO ERA* will be returned at an early date.

HOWARD S. — The formula for restoring light-struck plates has been published in the *PHOTO ERA*, but as you say you have only the 1905 numbers we repeat the formula for your benefit. Make up a bath of chromic acid, 30 grains; bromide of potassium, 60 grains; water, 10 oz. Soak the plates in this solution for ten minutes, wash and place in a dark room free from dust. The operation of soaking must be done by the red light. The plates lose some of their sensitiveness and the time of exposure should be double that of similar plates which have not been light-struck.

H. L. T. — For an alum fixing bath use hypo, 8 oz.; powdered alum, $\frac{1}{2}$ oz.; water, 32 oz. Dissolve the hypo, and then the alum in the water. At first the solution will be a milky color caused by the alum. Let it stand until the precipitate formed by the alum has settled at the bottom, then decant the clear liquid and throw away the sediment. If the solution is used before the liquid is clear, the plates are liable to have a mottled or spotted appearance. The acid bath may be used several times, as it does not discolor as does the plain hypo bath after use.

FRANCES D. — You will find in the November, 1903, number of the *PHOTO ERA* an article on the lens, giving the definitions used in connection with the lens and explaining them. You will find in this article all the answers to your questions in regard to a lens.

F. G. — A weak solution of hydrochloric acid and alum will remove the yellow stain from a pyro-developed negative. Before clearing the negative, make prints from it, as sometimes this yellow staining imparts a fine quality to a print.



CHARLES VANDERVELDE 4th PRIZE—AN ORE SMELTER

DEAN. — A little gum dammar dissolved in turpentine makes a good retouching fluid. Dip the finger in the solution and rub the spot to be retouched very lightly. Sometimes a bit of surgeon's cotton is better, and one should take care not to leave a ring about the portion. The fluid must be wiped away, leaving just enough to give a tooth to the surface, so that the pencil takes well. Finely powdered pumice stone will be found very useful in roughening the film just enough to take the pencil. Rub with the finger, and brush off all superfluous dust. It is seldom one needs to resort to a retouching fluid if pumice stone is used.

ADA T. — No, indeed; sulphite of soda cannot be substituted for hyposulphite of soda for fixing plates. Sulphite of soda is used for blackening negatives that have been bleached in bichloride of mercury in the process of intensifying.

C. E. W. — The transfer paper to which you refer is no longer made by the company. I do not know where it can be obtained. No dealer to whose catalogue I have access advertises the paper.

DANIEL S. — Your query in regard to artistic mounting papers you will find answered at length in the April number of the *PHOTO ERA*. Your query came after the article was in type, and the editor is always glad when any Guild member forestalls a query, as it seems to exemplify the aim of the Guild, to aid members along lines of practical work on which they desire more complete information than they possess.

THE PHOTO ERA EUROPEAN TOURS, 1905

For full information apply to PHOTO ERA PUBLISHING Co., 170 Summer Street, Boston, Mass.

Sundays in Italics.	Tour A. 67 Days, \$535.	Tour B. 80 Days, \$645.	Tour C. 88 Days, \$700.	Tour I. 81 Days, \$645.	Tour J. 87 Days, \$690.	Tour L. 80 Days, \$645.
June 17	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....
June 27	Antwerp.....	Antwerp.....	Paris.....	Antwerp.....	Antwerp.....	Antwerp.....
June 28	Ghent.....	Ghent.....	Paris.....	Ghent.....	Ghent.....	Ghent.....
June 29	Bruges.....	Bruges.....	Paris.....	Bruges.....	Bruges.....	Bruges.....
June 30	Brussels.....	Brussels.....	Paris.....	Brussels.....	Brussels.....	Brussels.....
July 1	Louvain.....	Louvain.....	Paris.....	Louvain.....	Louvain.....	Louvain.....
July 2	Cologne.....	Cologne.....	Paris.....	Cologne.....	Cologne.....	Cologne.....
July 3	The Rhine.....	The Rhine.....	Paris.....	The Rhine.....	The Rhine.....	The Rhine.....
July 4	The Rhine.....	The Rhine.....	Paris.....	The Rhine.....	The Rhine.....	The Rhine.....
July 5	Heidelberg.....	Heidelberg.....	Paris.....	Heidelberg.....	Heidelberg.....	Heidelberg.....
July 6	Lucerne.....	Lucerne.....	To Lucerne.....	Lucerne.....	Lucerne.....	Lucerne.....
July 7	Interlaken.....	Interlaken.....	Lucerne, Interlaken.....	Interlaken.....	Interlaken.....	Interlaken.....
July 8	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....	Bernese Oberland.....
July 9	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....	Berne.....
July 10	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....	Lake Geneva, Territet.....
July 11	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....	Zermatt, Gornergrat.....
July 12	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Simplon Pass.....	Simplon Pass.....	Simplon Pass.....
July 13	Lake Como.....	Lake Como.....	Lake Como.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....	Lks. Mag're & Lugano.....
July 14	Milan.....	Milan.....	Milan.....	Lake Como.....	Lake Como.....	Lake Como.....
July 15	Milan.....	Milan.....	Milan.....	Bergamo.....	Bergamo.....	Bergamo.....
July 16	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 17	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 18	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....	Venice.....
July 19	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....	Venice, Chioggia.....
July 20	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....	Ravenna.....
July 21	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....	Bologna.....
July 22	Florence.....	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....
July 23	Florence.....	Florence.....	Florence.....	Milan.....	Milan.....	Milan.....
July 24	Florence.....	Florence.....	Florence.....	St. Gothard Pass.....	St. Gothard Pass.....	St. Gothard Pass.....
July 25	Florence.....	Florence.....	Florence.....	Furka Pass.....	Furka Pass.....	Furka Pass.....
July 26	Assisi.....	Assisi.....	Assisi.....	Tête Noire.....	Tête Noire.....	Tête Noire.....
July 27	Perugia.....	Perugia.....	Perugia.....	To Chamonix.....	To Chamonix.....	To Chamonix.....
July 28	Orvieto.....	Orvieto.....	Orvieto.....	Chamonix.....	Chamonix.....	Chamonix.....
July 29	Rome.....	Rome.....	Rome.....	Chamonix.....	Chamonix.....	Chamonix.....
July 30	Rome.....	Rome.....	Rome.....	Geneva.....	Geneva.....	Geneva.....
July 31	Rome.....	Rome.....	Rome.....	To Turin.....	To Turin.....	To Turin.....
Aug. 1	Rome.....	Rome.....	Rome.....	Turin.....	Turin.....	Turin.....
Aug. 2	Rome.....	Rome.....	Rome.....	Genoa.....	Genoa.....	Genoa.....
Aug. 3	Tivoli.....	Tivoli.....	Tivoli.....	Pisa.....	Pisa.....	Pisa.....
Aug. 4	Albano, Nemi.....	Albano, Nemi.....	Albano, Nemi.....	The Eastern Riviera.....	The Eastern Riviera.....	Rome.....
Aug. 5	To Naples and Capri.....	To Naples and Capri.....	Rome.....	The Western Riviera.....	The Western Riviera.....	To Capri, Capri.....
Aug. 6	Capri.....	Capri.....	Anzio.....	Monaco, Monte Carlo.....	Monaco, Monte Carlo.....	Sorrento.....
Aug. 7	Sorrento.....	Sorrento.....	Pompeii, Capri.....	The Corniche Drive.....	The Corniche Drive.....	Amalfi, Salerno.....
Aug. 8	Amalfi, Salerno.....	Amalfi, Salerno.....	Taormina.....	Marseilles.....	Marseilles.....	Pompeii.....
Aug. 9	Pompeii.....	Pompeii.....	En route to.....	Arles, Nîmes.....	Arles, Nîmes.....	Naples.....
Aug. 10	Naples.....	Naples.....	Olympia.....	Pont du Gard.....	Pont du Gard.....	Naples.....
Aug. 11	Naples (sail).....	Naples.....	Delphi.....	Carcassonne.....	Carcassonne.....	Palermo, Monreale.....
Aug. 12	Due in N. Y. Aug. 23.....	Palermo, Monreale.....	Corinth.....	Lourdes.....	Lourdes.....	Palermo.....
Aug. 13	.....	Palermo.....	Athens.....	Gavernie.....	Gavernie.....	Palermo, Cefalu.....
Aug. 14	.....	Palermo, Cefalu.....	Athens.....	Pau.....	Pau.....	Selinunto, Girgenti.....
Aug. 15	.....	Selinunto, Girgenti.....	Athens.....	Angoulême.....	Angoulême.....	Syracuse.....
Aug. 16	.....	Syracuse.....	Athens.....	Tours.....	Tours.....	Taormina.....
Aug. 17	.....	Taormina.....	Athens.....	Loches.....	Loches.....	Taormina.....
Aug. 18	.....	Taormina.....	Athens.....	Amboise, Blois.....	Amboise, Blois.....	Taormina.....
Aug. 19	.....	Taormina.....	Athens.....	Chartres.....	Chartres.....	Taormina.....
Aug. 20	.....	Messina.....	Athens.....	Paris.....	Paris.....	Messina.....
Aug. 21	.....	Naples.....	Epidauros.....	Paris.....	Paris.....	Naples.....
Aug. 22	.....	Naples (sail).....	Mycenæ, Tiryns.....	Paris.....	Paris.....	Naples (sail).....
Aug. 23	.....	.....	Cnossus in Crete.....	Paris.....	Paris.....	.....
Aug. 24	.....	.....	Patmos, Samos.....	Paris.....	Paris.....	.....
Aug. 25	.....	.....	Delos, Andros.....	Rouen.....	Rouen.....	.....
Aug. 26	.....	.....	Salamis, Eleusis.....	Caen.....	Caen.....	Gibraltar.....
Aug. 27	.....	Due in N. Y. Sept. 5.....	Corfu.....	Cherbourg (sail).....	London.....	Due in N. Y. Sept. 5.....
Aug. 28	.....	.....	Brindisi.....	Due in N. Y. Sept. 6.....	London.....	Due in N. Y. Sept. 6.....
Aug. 29	.....	.....	Naples.....	.....	London.....	.....
Aug. 30	.....	.....	Naples.....	.....	London.....	.....
Aug. 31	Naples.....	London.....
Sept. 1	Naples (sail).....	London.....
Sept. 2	Due in N. Y. Sept. 13.....	London.....
.....	Due in N. Y. Sept. 12.....

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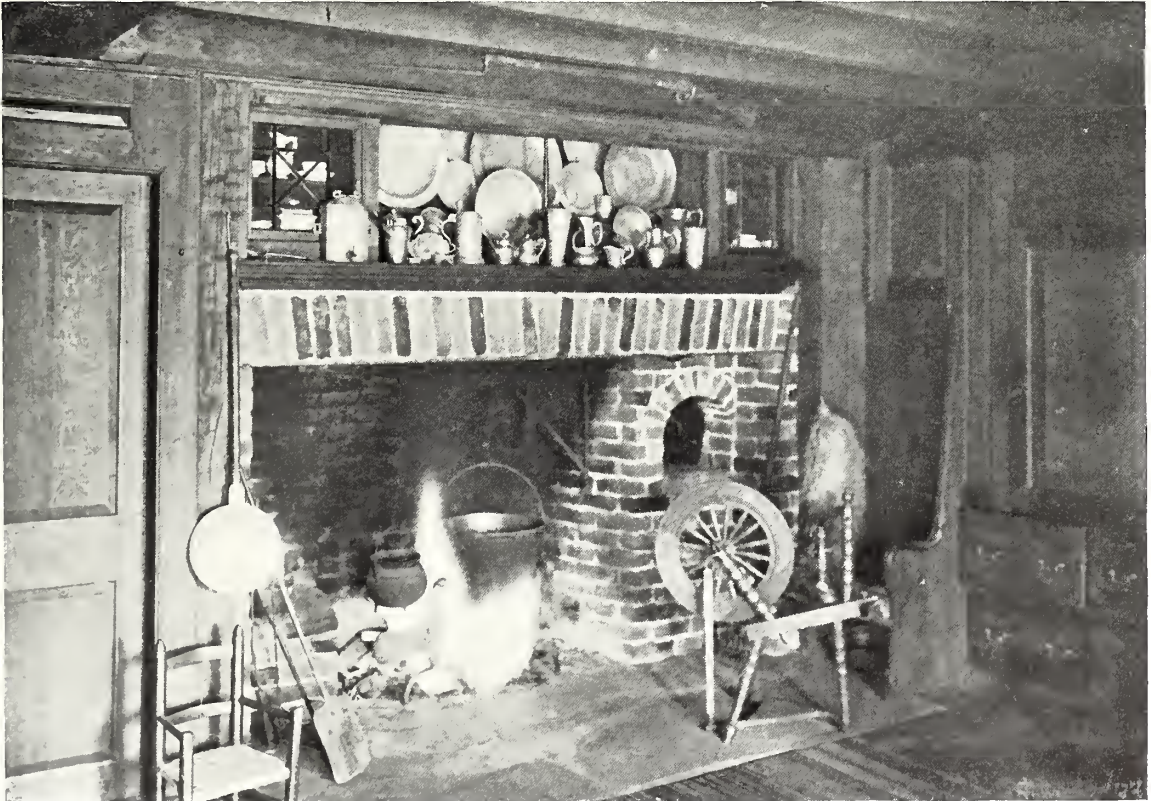
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C. H. CLAUDY

A REAL FIREPLACE

PHOTOGRAPHIC PICTURES FROM THE LAST CENTURY

C. H. CLAUDY

Almost an impossible title, isn't it? But go you with your camera to some of the little villages of old New England and take with you the eyes to see, and you may make for yourself a-many plates with memories of a time of long ago, even a century past. For they are old, these half-deserted towns, — old with the weight of years; old with the burden of history; old with their pride of the long-by past; old in tradition and in thought. In them you can see how your ancestors lived, how they worked and tilled the toil, how they wrought and fought and died, and if you can forget the mechanism of your craft, you may transfer a bit of this atmosphere to your plate and paper and have a picture which will be a delight for all time.

I speak not of masterpieces, photographic or otherwise. To but few is given either the knowledge or the ability to make with camera, with brush, or with pencil, a pictorial record which will



C. H. CLAUDY

BALL ROOM, FRARY HOUSE

live. But there are many of us who can surpass the examples of excellence laid down in the text-book, and not a few whose work is in the main pictorial, even if always faulty; and to these the hamlets of the north are fertile fields. The genius, the man who makes masterpieces, never needs to wander for his material.

Of all the northern towns, there are none which hold within their borders so much to delight the heart of the picture maker, the antiquary, the lover of craft and the admirer of the picturesque, as Deerfield, Mass. *Old* Deerfield, remember; not South Deerfield, or North or East or West Deerfield, nor even Greenfield, near by, but old Deerfield, — the Deerfield of the Indian Massacre, the Deerfield of history, now nearly empty of all but old names, old houses, old faces, but full of pride in her history and modestly conscious of her beauty and attractiveness.

There are certain iron-clad rules for the heart of him who would see Deerfield as she is; these rules must be obeyed to the letter or the Deerfield seen will seem more cold than hospitable, more deserted than picturesque. But the rules are few and simple. You must reverence that which Deerfield holds sacred; you must be simple and cordial, and remember that no matter what your state in life or your own pride of birth, Deerfield and the Deerfielders date themselves back to the beginning of this country's history; you must love simple things and old things and see the beauty in the ancient, even when most inconvenient. Do and be all this — and such a simple, easy "all" it is — and Deerfield will show you her heart, and you can picture to yourself the times and lives of a century gone by, and, perhaps, catch a little of it with your camera.

A few years ago there were but two ways of reaching Old Deerfield, — by train from Springfield or Greenfield, or by driving from most anywhere. Now, alas, and again alas! there are trolley cars, by the convenience of which you can enter from the north or from the south, and have your first glimpse of the most beautiful spot in western Massachusetts spoiled by a piece



C. H. CLAUDY

DESERTED

of modernity as jarring as it is unwelcome. But Deerfield forgets and ignores the trolley; and if you are wise, you will also.

We have come, then, by train, and we get off at a little red station and somewhat disconsolately watch the train out of sight around a curve, for there is no indication of a town. But we take our courage in one hand, our camera in the other, and walk down the hill to the left of the track, and within half a mile the worn old road takes us into another road, wide and shady, with old, old elms on either side, which fairly take away the breath by their magnificence: and this is Deerfield. One long "street," if street it can be called, the beautiful trees on both sides, meeting above as far as the eye can reach, and on either side, a good distance apart, the quaintest, dearest old houses in the world! Few of them are beautiful of themselves, very few would attract a second glance if, O sacrilegious thought! they were transplanted to a modern town; but we lose no time in unslinging camera, and point at first this and then that old but sturdy dwelling; and if we are lucky, and frowning Mt. Pocumtuck has scared up a few clouds for us, and we can get the light just right, we can take the ugliest house in town and find it picturesque in the extreme.

If we are to spend but the day, it is hardly likely that we shall have the privilege of a peep into some of the quaint interiors; but if we are to enjoy a longer stay, and if we are so fortunate as to have a letter from some name beloved in Deerfield, which will vouch for our respect and convince those with whom we foregather that we are of the elect and not simply a common, curious tourist, then we may see what Deerfield does not show to every one. Perhaps it is an old fireplace, several years older than the century, — a little restored it may be, but still the real thing. A real spinning-wheel, in perfect order, is by the fireplace, real pewter dishes shine above the arch, old kettles hang and steam above a fire, held by the crane of our forefathers, and perhaps



C. H. CLAUDY

AGE AND DECAY

a bed warmer whispers of cold sheets and unheated bedrooms that were the lot of the pioneers.

Possibly we can see Frary House, but certainly not unless we know the present owner or some one near to her. The house has been restored, with much time and labor expended, and it has been filled with relics and possessions of early Deerfield days. When the ball room of Frary House was restored, it was opened with a costume ball, one of the events, both artistic and social, of western Massachusetts; and photographs taken at that time, of the ladies and gentlemen, descendants of early Massachusetts settlers dressed in early colonial costumes, could have been taken a hundred years ago, had cameras and plates existed then.

But all is not restored in Deerfield, nor need we wander far to find old houses, tenantless, now gradually and gracefully decaying in a dignified and good old age. Deserted indeed, the vines crawl through the glassless windows, the birds hop in and out of the perforated roofs, and desolation broods over the scene. Wandering afield, we can perhaps see a mowing machine or a reaper, long past its useful days, and now crumbling peacefully away under the sun and the rain, the tall grass growing through its ancient mechanism and a deserted barn in the distance adding to the atmosphere of the *mise en scene*. For Deerfield and the Deerfield valley was once prosperous in farming, and although the industry is still carried on, it is in a more or less perfunctory manner; and the ground, depleted by the crops of a hundred years and more, no longer grows the quantities it yielded once. But Deerfield corn is still the sweetest in the whole United States, and Deerfield tobacco finds a ready market.

If we walk to the southern end of the town, we will come to the edge of the plateau on which the village is built; and if it is a hot day in summer and the wire-grass is dry, perhaps we will see a lot of youngsters sliding down the steep hill on the grass and the most important part of their little panties, enjoying to the full the sport of coasting in midsummer, with no thought of maternal sighs at worn-out trousers.



C. H. CLAUDY

THE POND

From the north end of the town we can wander away over the Deerfield moors and find a pond and a dear little river, which will afford us material for many a pretty, peaceful land and water scene. If we want to develop our plates in Deerfield, we must depend on an acquaintance with the Misses Allen, famous in photographic circles for their beautiful child studies. And have we the good fortune to meet them, we see two sweet-faced ladies, masters both of the art of posing, and skilled workers with the lens and plate, whose old and weather-beaten house is one large photographic workshop, filled to overflowing with paraphernalia and dozens of portfolios of the exquisite work they do, waiting to fill the orders which arrive from publishers and illustrators the country over.

Perhaps our friends in town have arranged that we meet some of the famous people who summer here; and if we are very lucky, we will have a chance to take coffee before a driftwood fire in the studio of the gifted Chicago artist who paints and draws and hammers brass and silver and makes barbaric jewelry as the mood strikes her. An old and dilapidated house, once the abode of a poor, half-crazed woman who lived the life of a hermit, has been made into a beautiful studio, by altering the north wall for a light and clearing away the fallen floors. The big fireplace is frequently the rallying ground for artists, writers, and illustrators; and before a bright and leaping fire we can have a feast of reason and a flow of soul which fits in most charmingly with the old-world atmosphere of the place. If we wish, we can visit the studio of Fuller, reverently kept by his family, and, full of half finished studies and early work, it is intensely interesting to the student of painting and particularly to the admirers of one of the greatest of American artists. Then there is the rug weaving and the basket making and the blue and white work



W. H. PORTERFIELD

ON BUCKTHORN ISLAND

and the fine embroidery, for Deerfield has few peers as a home of craft, — and craft, too, which touches art all along the line, so that where the dividing line is no man may clearly see.

If we can get one of the many delightful ladies to whom we have been introduced to invite us home to supper, — and they are hospitality itself, these Deerfield folk, — what a time we can have listening and looking as she displays her household gods and goods and chattels. But woe betide you if, in the innocence of your heart, you think to buy some of the priceless old china, the ancient “high boys,” or the linen a century old. You will find that, shrewd denizen of modern civilization that you are, you have no higher notion of the true value of the old than has your gentle hostess. Deerfield is tourist ridden, and much intercourse has added to their natural reverence for their possessions, a full knowledge of their value in hard shekels, and, would you purchase, you are referred to the best-known of New York antique dealers.

If we have stayed our allotted time, and the evening of our departure has come, we walk slowly to the station in time for the last train, taking one more picture as we go, a little softened and vague in deference to the low evening light and the mellow look of trees and outlines.

And then the train comes shrieking in, and we hastily get aboard, wondering if it is possible that we are really in the twentieth century; leaving behind us, with a regret tempered only by our hopes for our plates, the charming atmosphere of generations ago, and hugging firmly to us the determination to come again, and yet again.

THE PRINCIPLES OF PHOTOGRAPHY BRIEFLY STATED

PHIL M. RILEY

SIXTH PAPER — PRINTING AND DEVELOPING VELOX PAPER

1. *Nature of Development Papers.* — Velox is one of the gelatine papers of the development class, sometimes spoken of as “gaslight” papers. Development papers are simply papers of many different textures and surfaces coated with a gelatine emulsion of silver bromide exactly the same as that which is used on dry plates and films. The emulsion used, however, is much less sensitive or rapid than the plate emulsion. Manipulation is very similar to that employed in making negatives. After exposure to the light the image is not visible, and only appears after the developer has been applied. The entire process of producing prints is very simple to any one who understands how to develop a plate; for, like a plate, the paper requires exposure, development, and fixation before it can be safely exposed to white light. Since the paper is so much less sensitive than plates, it can be developed and fixed in weak lamplight, gaslight, or electric light; but despite these claims, I advise treating it with the same care that one would give a very slow plate, and I feel confident that the general good results obtained will be ample recompense for the extra trouble.

2. *Grades of Velox.* — Velox is divided broadly into two kinds of papers called “regular” and “special,” these terms having reference to the time required for exposure and development. In each division will be found a variety of surfaces which adapt the paper to all kinds of work and to negatives of different qualities. Regular papers require a longer exposure than Special papers, and they develop more quickly; this adapts them to negatives that lack contrast. Special papers require a shorter exposure and longer development. This reduces the contrast on hard negatives and gives soft effects with fine detail. Special papers differ from the Regular in that they print in about one fourth of the time, and require a development four times as long. To further extend the adaptability of these two speeds, several grades of paper are obtainable in great variety of thickness, surface finish, and texture, according to the use for which each variety is designed. Papers are provided for almost every class of negatives; each grade has its own special qualities, but the manipulation of all is practically the same. Velox is made in several grades as follows: —

Regular. — Carbon (matt surface); Carbon Double Weight (matt surface); Rough; Glossy; Velvet (semi-gloss surface); Velvet Double Weight (semi-gloss surface); Velvet Post-cards (semi-gloss surface). Special. — Carbon (matt surface); Portrait (semi-matt surface); Portrait Double Weight (semi-matt surface); Rough; Rough Double Weight; Glossy; Post-cards (semi-matt surface); Velvet (semi-gloss surface); Velvet Double Weight (semi-gloss surface); Velvet Post-cards (semi-gloss surface).

3. *Use of Different Grades.* — Broadly speaking, the Regular papers are for contrasty effects and the Special papers are for soft effects. The worker can choose the speed and grade of paper which is best suited to his work, but I advise the use of Regular Velox only for flat negatives requiring more contrast; negatives which have enough or too much contrast should be printed on Special Velox. A good way is to sort your negatives before printing from them. Ordinary negatives will produce the best results on Special Carbon Velox. For photographs requiring fine detail and softness Special Portrait Velox will prove all that can be desired. For thin negatives which require more contrast, regular Carbon Velox is especially desirable. The rough grades are intended for large prints in which broad effects are desired. The double weight papers require no mount and should be printed under a cut-out to insure a white margin which will relieve the print and give the effect of a mounted photograph.

4. *Filling the Printing Frame.* — Use your ordinary developing lamp both for filling your printing frame and developing. Take out the ruby glass and use ordinary glass with one piece of post-office paper before it, or a piece of yellow glass. This gives you all the light you need



BRUNO WIEHR

THE WIDOW

and is perfectly safe. Place the negative in the printing frame film side up, and then place upon it a sheet of Velox paper with the sensitive surface next to the film. The sensitive surface of the paper has a slight gloss, and as the paper has a tendency to curl with the sensitive surface inward, that side can always be readily distinguished. A positive test is to bite a corner, when the sensitive side sticks to the teeth. Both the negative and the paper should be dusted with a camel's-hair brush to avoid small spots. Place the back of the frame in position and clamp it in place. Be sure to cover the box containing your stock of paper before exposing the printing frame to



BRUNO WIEHR

THE BIRCHES

bright light. Velox is so sensitive that it is easy to fog the whole box of paper unless carefully handled.

5. *The Printing Light.* — Any artificial light is preferable to daylight, because it is easily controllable and uniform in intensity. If a certain grade of paper, exposed for twenty seconds behind a given negative at twelve inches from a gas-jet, gives a perfect print, you can duplicate it at any time by making subsequent prints under exactly the same conditions. Lamplight, gaslight, or electric light are all satisfactory, but vary in intensity. The Welsbach light will necessitate making the exposure about one third of that required by the ordinary four-foot gas burner; the sixteen candle power electric light is a little slower than the Welsbach. Probably an ordinary gas burner furnishes the best light to use, as the shorter exposures required by the other lights do not admit of so great latitude in manipulation. You will need to place a box, or a support of some kind, in front of your light on which to stand the printing frame during exposure. This should be at such a level that the source of light is directly opposite the center of the printing frame. Parallel lines should be ruled across this improvised exposure board at intervals of three inches apart, and marked 6, 9, 12, etc., according to their distance from the source of light. You can thus always be sure of repeating the same conditions as to light intensity.

6. *Time of Exposure.* — The time of exposure will vary from ten seconds to three minutes or more at twelve inches from a gas-jet. Several things influence the time of exposure, so that an exact and fixed time cannot be given. You have already seen that Regular Velox requires four times the exposure necessary with Special, and that the intensity of different lights varies the time of exposure. It is easily seen that the density of the negative will have its effect, thin negatives printing faster than dense negatives. The distance between the light and the negative will also have a marked effect.

7. *Distance from the Light.* — Instruction books generally advise you to measure your negative from corner to corner diagonally, and make that the printing distance for that negative. There is a good reason for choosing this as a standard distance. For illustration, suppose we must expose a $3\frac{1}{2} \times 3\frac{1}{2}$ negative at five inches from the light to get a good print. A calculation will show that this cannot be safely done with a negative of 5×7 or over. The center of the negative is five inches from the light, while the edges are six inches from it. Now, the intensity of illumination varies inversely as the square of the distance from the source of light, or, in other



BRUNO WIEHR

THE MEADOW

words, the intensity of light at the edges is only 25-36 of that at the center. If we place the negative at nine inches from the light this falling off at the corners is quite a little reduced, and appears as 81 to 92. This difference in intensity is hardly noticeable in the prints, but it would be better to have it less. It will be seen that a distance less than the base line of the negative would be unsafe. For negatives up to 5 x 7 we advise a standard distance of twelve inches, which will be found correct for most ordinary work. It is not wise, however, to use only one printing distance.

8. *Controlling Contrast in Printing.* — The different speeds of Velox enable you to control contrast in your prints to a certain extent, and you can also secure additional control by varying the distance from the light to the negative when printing. Almost everybody knows that a weak light increases contrasts, and that an intense light lessens them. The law for intensities, already quoted in this lesson, shows that the intensity of light may be varied by changing the distance between the negative and the light. The effect of this change may be seen by holding a landscape negative about six inches from the light, and then five feet. When near the light the sky is translucent, and the foliage clear glass, but increasing the distance to five feet renders the sky opaque, while the clear glass remains the same. The contrast has been increased. This rule holds true for small variations in distance, and through all gradations of the negative. Dense, harsh, or contrasty negatives will give softer prints if exposed very near the light, as the dense high lights will be penetrated by the intensity of the light, while the shadows will receive no more light than if exposed a proportionate time at a greater distance. A flat, thin negative should be printed at a considerable distance from the light, so as to increase its printing density and contrast.

9. *Comparative Exposures.* — It should be remembered, of course, that the printing time varies with the distance from the light, but this is easily determined by applying the law for intensities. Thus if the distance is doubled, the exposure will be four times as great; if the distance is increased three times, the exposure will be nine times as great. Suppose a negative is printed ten seconds at six inches from the light, and it is desired to change the distance to fourteen inches. The proportionate exposure will appear as 36 to 196 (or reducing, 9 to 49). In other words, the exposure at fourteen inches will be $49 \div 9 \times 10 = 54$ seconds. While a calculation can easily be made for each change, I have formulated the following table, which I find very useful in my own



BRUNO WIEHR

MOORLAND

work. The table is easily understood. Thus, if at twelve inches a negative requires thirty seconds, looking to the right of thirty in the twelve-inch column, you will find that it requires forty-seven seconds at fifteen inches, and so on.

COMPARATIVE EXPOSURES

Inches	6	9	12	15	18	21	24	27	30	36	42	48	54	60
0-1	0-2	0-3	0-5	0-7	0-9	0-12	0-15	0-19	0-27	0-37	0-48	1-1	1-1	1-15
0-1	0-3	0-5	0-8	0-11	0-15	0-20	0-25	0-31	0-45	1-1	1-20	1-41	1-41	2-5
0-2	0-5	0-8	0-13	0-18	0-25	0-32	0-41	0-50	1-12	1-38	2-8	2-42	3-20	3-20
0-2	0-6	0-10	0-16	0-23	0-31	0-40	0-51	1-3	1-30	2-3	2-40	3-32	4-10	4-10
0-3	0-7	0-12	0-19	0-27	0-37	0-48	0-61	1-15	1-48	2-27	3-12	4-3	5-0	5-0
0-4	0-9	0-15	0-23	0-34	0-46	1-0	1-16	1-34	2-15	3-4	4-0	5-4	6-15	6-15
0-4	0-10	0-18	0-28	0-40	0-55	1-12	1-21	1-53	2-42	3-41	4-48	6-5	7-30	7-30
0-5	0-11	0-20	0-31	0-45	1-1	1-20	1-41	2-5	3-0	4-5	5-20	6-45	8-20	8-20
0-5	0-12	0-22	0-34	0-50	1-7	1-28	1-51	2-18	3-18	4-30	5-52	7-25	9-10	9-10
0-6	0-14	0-25	0-39	0-56	1-17	1-40	2-7	2-36	3-45	5-6	6-40	8-26	10-25	10-25
0-7	0-16	0-28	0-44	1-3	1-26	1-58	2-22	2-55	4-12	5-43	7-28	9-27	11-40	11-40
0-7	0-17	0-30	0-47	1-8	1-32	2-0	2-32	3-8	4-30	6-8	8-0	10-8	12-30	12-30
0-8	0-18	0-32	0-50	1-12	1-38	2-8	2-42	3-20	4-48	6-32	8-32	10-48	13-20	13-20
0-8	0-20	0-35	0-55	1-19	1-47	2-20	2-57	3-39	5-15	7-9	9-20	11-49	14-35	14-35
0-9	0-21	0-38	0-59	1-26	1-56	2-32	3-12	3-58	5-42	7-46	10-8	12-50	15-50	15-50
0-10	0-23	0-40	1-3	1-30	2-3	2-40	3-23	4-10	6-0	8-10	10-40	13-30	16-40	16-40
0-10	0-24	0-42	1-6	1-35	2-9	2-48	3-33	4-23	6-18	8-35	11-12	14-11	17-30	17-30
0-11	0-25	0-45	1-10	1-41	2-18	3-0	3-48	4-41	6-45	9-11	12-0	15-12	18-45	18-45
0-12	0-27	0-48	1-15	1-48	2-25	3-12	4-3	5-0	7-12	9-48	12-48	16-12	20-0	20-0
0-12	0-28	0-50	1-18	1-53	2-33	3-20	4-13	5-13	7-30	10-13	13-20	16-53	20-50	20-50
0-13	0-29	0-52	1-21	1-57	2-39	3-28	4-23	5-25	7-48	10-37	13-53	17-33	21-40	21-40
0-13	0-31	0-55	1-26	2-4	2-48	3-40	4-38	5-44	8-15	11-14	14-40	18-33	22-55	22-55
0-14	0-33	0-58	1-29	2-11	2-58	3-52	4-54	6-3	8-42	11-51	15-28	19-34	24-10	24-10
0-15	0-34	0-60	1-34	2-15	3-4	4-0	5-4	6-15	9-0	12-15	16-0	20-15	25-0	25-0

10. *Dodging*. — It will generally be found advisable not to use exposures less than ten seconds, as a little variation in so short a time may spoil the print. Where the exposures are longer, there are many ways of dodging the print. The cloud portions of a negative are often so overexposed that any detail which they may have will be lost in printing. Now, a clear white sky is an abomination, especially when, as is often the case, the negative has a good cloud effect, if it could only be brought out. The required detail can oftentimes be secured by holding the printing frame at such an angle that the sky is nearer the light than the rest of the negative. By inclining the frame in this way the intensity of the light can be so greatly increased on one portion of the negative that one side may receive four times as much as the other, if it is so desired. It



BRUNO WIEHR

THE BROTHERS

is not always the sky which may need this additional light. One often has negatives, such as lake views, showing a densely wooded shore, which will appear nearly black with little detail if sufficient exposure is given for the water. This defect can be remedied in many cases by inclining the water portion toward the light. If the foliage is still too dark and lacking in detail, try another print, and this time shade that part of the negative with a piece of cardboard for about half the printing time. If the card is kept moving back and forth about half an inch, no line can be seen between the shaded and unshaded parts of the print. This is a useful dodge, and the resourceful worker can find many varied uses for it.

11. *Test for Exposure.* — You have seen from what has preceded that each negative must be tested to find the time of exposure. So many things influence the length of exposure that no fixed time can be given. Most of your good negatives, however, will print best at twelve inches from the light, and on Special Velox the average printing time will be about one minute, if an ordinary gas flame is used. Regular Velox will require four times this exposure. When ready to make the first exposure, cut a sheet of paper into small strips, about a half inch wide, and placing one of these over an important part of the negative, make an exposure, using your best judgment as to time and distance from the light. Time should be taken by the second hand of a watch. Develop this strip; and if it is not satisfactory, try another, varying the time or distance as indicated by the first result. When a satisfactory result is obtained, you can proceed to make any desired number of prints from the same negative, and if time and distance are identical, all the prints will be equally good. After having made prints from a few negatives, and compared them with the negatives, you will soon be able to estimate the time to an accurate degree.



BRUNO WIEHR

PORTRAIT

It is a good plan to have a small book in which to record the exposures and distances required by different negatives, or to place these data on the negative envelopes, and if you have occasion to print from them again, you can do so without experimenting.

12. *Developer.* — Although good results may be secured with many different developers, perhaps a combination of metol and hydrochinone is the cheapest if not the best. The following formula is very satisfactory for Regular Velox: Water, 10 ounces; Metol, 7 grains; Hydrochinon, 30 grains; Sodium sulphite crystals, $\frac{1}{2}$ ounce; Sodium carbonate crystals, 400 grains; Potassium bromide (ten per cent solution), 10 drops. Dissolve in the order named in cold water.

For Special Velox use double the quantity of water.

13. *The Use of Bromide.* — The addition of a certain amount of potassium bromide is necessary to insure clear whites. The amount given in the above formula is usually sufficient, but more bromide solution may be needed, owing to the varying age of the paper and differing purity of the water and chemicals. The proper amount can easily be ascertained, however, by first adding the amount called for in the formula, and then making a trial test by immersing a small strip of Velox in the developer. If it remains white after being immersed about thirty seconds for Regular, and sixty seconds for Special, the amount is sufficient. If the paper becomes fogged, add bromide solution drop by drop until the paper is not changed in the stated time. Do this carefully, as too much bromide will produce greenish blacks, and it will then be necessary to add more stock solution. Notice that when just enough bromide has been added to keep the whites clear, the blacks may have a bluish tinge. If more bromide is added, the tone of the blacks will change from bluish black to pure black. Stop adding bromide at this point.

14. *Developing.* — Development is much the same as the development of plates. A large tray is needed for the developer. To the right of this place a bath of water in any dish or tray, and next to that the tray for the fixing bath. The prints should be immersed in the developer edgewise, face up, and evenly covered with it at once to insure uniformity of development. A good way is to tilt the tray so that the developer will run to one end of it, and after putting one edge of the paper into the developer, quickly tilt the tray in the opposite direction. This covers the whole print at once and no air-bubbles can form on the surface. The image will appear gradually if the exposure has been right; and if you are using a Special paper it will be fully developed in about thirty seconds. The Regular papers require only about half as much time. If your print flashes up very quickly and then grows black, you have overexposed in printing. If underexposed, your print will develop very slowly.

15. *Fixing Bath.* — As soon as the print reaches the required depth, quickly transfer it to the dish of clear water for a moment, to remove the superfluous developer, and then immerse it in the following acid fixing bath: Dissolve 16 ounces of sodium hyposulphite in 64 ounces of water, and then add the following hardening solution: Water, 5 ounces; Sodium sulphite crystals, $\frac{1}{2}$ ounce; Acetic acid No. 8, 3 ounces; Powdered alum, $\frac{1}{2}$ ounce. This bath can be used repeatedly, and will keep in good condition for any length of time, so that quantities may be made in advance. One pint will fix about one hundred 4 x 5 prints if it is kept acid, but by degrees the developer which adheres to the prints will cause the bath to become slightly alkaline. Such a condition will be indicated by soft, slimy prints and peeling of the film at the edges. Test the bath occasionally with blue litmus paper. If it fails to turn red, it has lost its requisite acidity and $\frac{1}{2}$ ounce of acetic acid should be added to each 50 ounces of solution.

16. *Fixing the Prints.* — Immerse the print in the fixing bath edgewise, face down. Keep it slightly in motion and well separated from any others that may be in the bath by occasionally rocking the tray or tapping the print under the surface of the bath with a glass stirring rod. This will insure uniform and thorough fixation and prevent stains caused by uneven action of the hypo on different parts of the print. Several prints may be in the bath at the same time if they do not follow each other too rapidly and care is taken to move each one about for a few seconds before it is allowed to sink to the bottom and remain quiet. An occasional rocking of the tray will prevent the prints from becoming imbedded together and thus stopping fixation. Use a large tray so as to have plenty of fixing bath. A pint is a small enough quantity. Prints should be fixed for at least fifteen minutes, and if the bath can be kept cool in summer, it will be well to fix them for one half hour then as well as in winter.

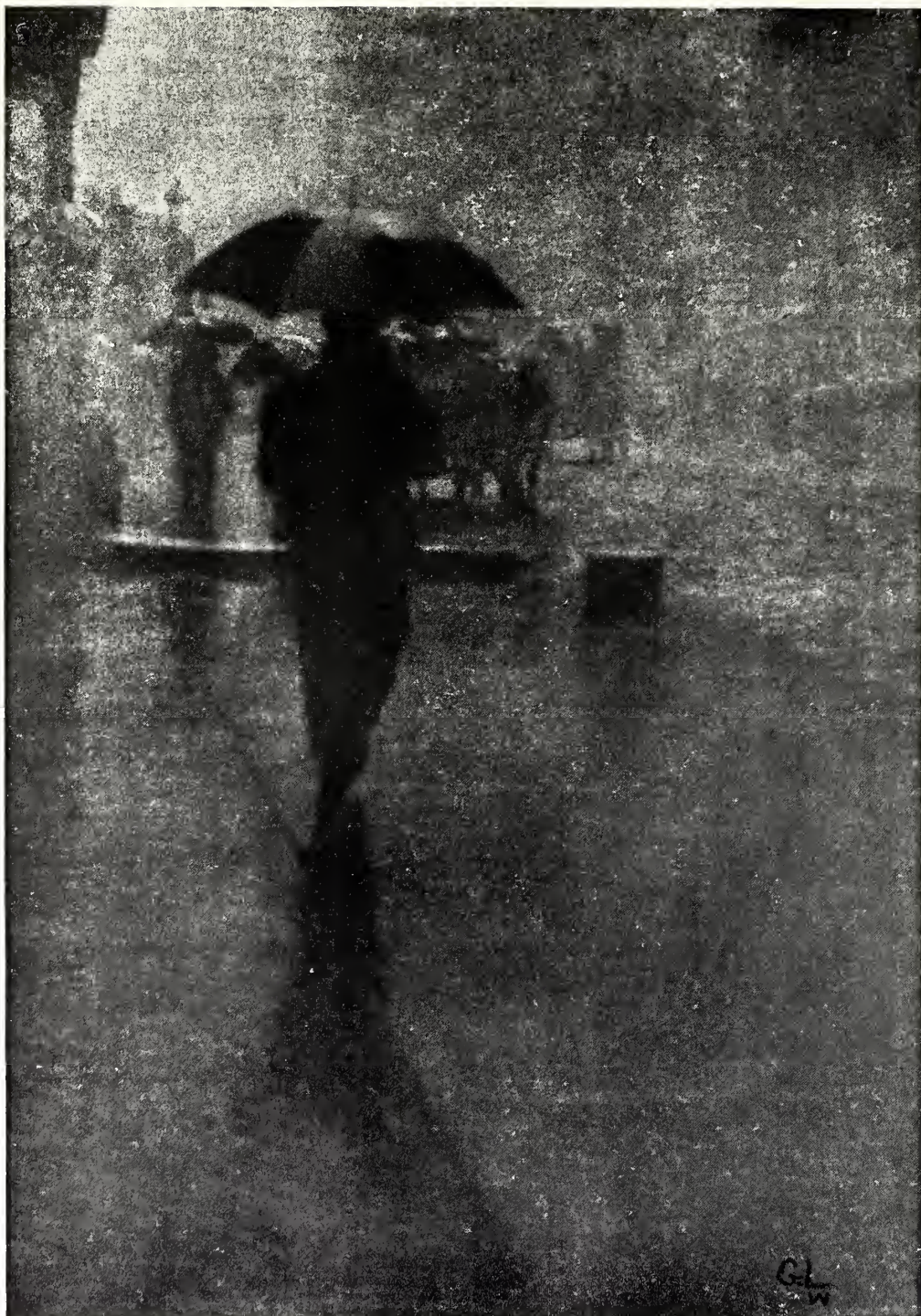
17. *Washing the Prints.* — When the prints have been thoroughly fixed, they should be placed in a large dish of water in the sink, and water from the tap should be allowed to run on them slowly for an hour. The water should not be allowed to fall directly on the prints, as it is liable to cause blisters. A good way to avoid this is to place a tumbler in the dish used for washing and allow the water to flow into this first and then over the sides into the dish. If running water is not available, the wash water should be changed at least ten times. Thorough washing is important, for the prints will fade in time if the hypo is not wholly removed.

18. *Drying the Prints.* — As soon as the prints are washed, rinse each one off in slowly running water to remove all scum or dust, and lay them on a sheet of glass. Cover them with a white blotter and remove all superfluous moisture by the use of a squeegee roller. Then place them between clean white blotters to dry. A print when dry will curl a little, but can be made to lie flat by turning it face downward on some smooth surface and then drawing a blunt-edged ruler over the back of it with a slight pressure, and lifting the print as the ruler passes over it. It may be necessary to turn it around several times so as to pass the ruler over it in opposite directions in order to act on all four edges alike. Do not bend any portion of it too sharply, as you may crack the gelatine surface. After this, place the prints face down in a pile under a book or some convenient weight until you wish to mount them. If the prints are immersed for a few minutes in a solution of one ounce of glycerine in fifteen ounces of water, it will do much



CHAS. W. DEARBORN
THE FARMER'S EARLY SPRINGTIME TASK





GEORGE W. LEIGHTON
WHITHER AND WHENCE ?





W. A. BOGER
OVER THE HILL





A. GOMEZ GIMENO
BROUILLARD AU PORT





WARD E. SMITH

AFTER POND LILIES

to prevent their tendency to curl badly in drying. This should be done immediately after they have been fixed and just previous to drying.

19. *Cleanliness and Care.*—Cleanliness is one of the most essential factors in photographic success. All of the trays and dishes used should be kept scrupulously clean, and the tray used for fixing should never be used for any other purpose. The hands must be perfectly clean and dry when handling any printing paper. Never attempt to develop paper after the hands have been in the hypo, but wash them thoroughly to remove every trace of it. Use the right hand for developing and the left for fixing, and keep both hands out of the fixing bath as much as possible. A glass stirring rod will help very much on this point. Neglect of this caution is sure to cause trouble, for the slightest trace of hypo on the prints before development or in the developer will produce stains. Do not forget to keep the prints moving in the hypo for the first few seconds, and occasionally afterwards to prevent them from becoming packed together at the bottom of the tray. Many prints are spoiled by neglecting this precaution.

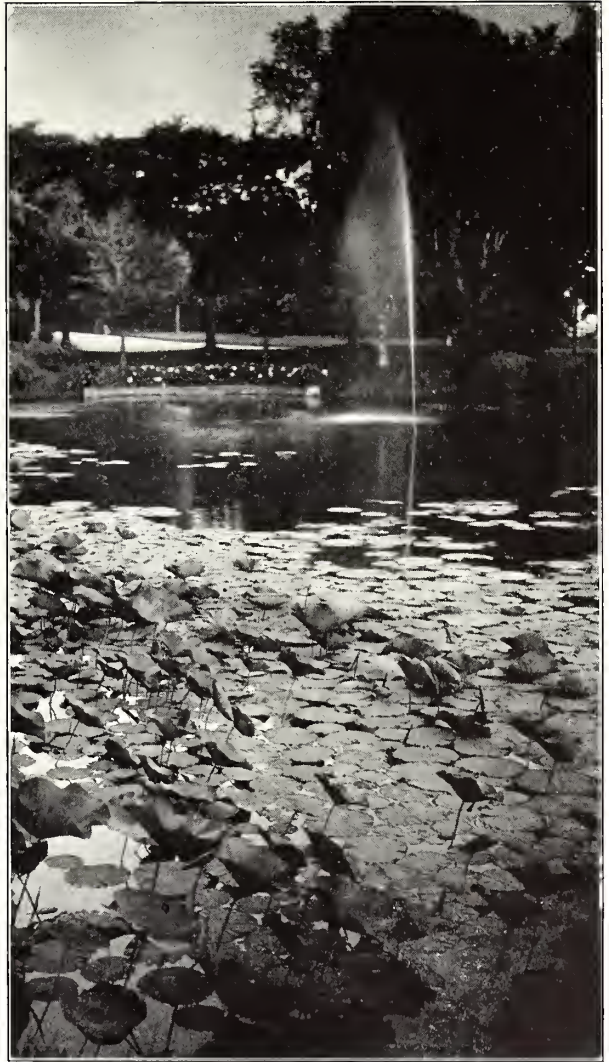


F. E. COOMBS
UNDER THE PINES

OUR ILLUSTRATIONS

Among the younger members of the German school one who has had the ability to make somewhat of an impression, judging by the fact that his work is well received by exhibition judges and often seen reproduced in the foreign magazines, is Bruno Wiehr of Dresden. Wiehr is associated as a portrait photographer with Hugo Erfurth, one of the best professionals in the whole of Germany. Under Erfurth's training he has developed considerable ability in portrait work, although he is by choice a landscape photographer. We have before now reproduced some of his landscape work, and of the six pictures we reproduce in this number, three are of this class. All are from small gum-bichromate originals, on rough paper, as the reproductions clearly show. Although these pictures are from small negatives, they are worthy of a much larger form than their maker has seen fit to give them.

It is a noteworthy fact that in all of these pictures, as well as in others of Wiehr's landscapes which we have seen, water is totally absent. As fully four fifths of all the landscape photographs which come under our observation have water as a prominent feature, and as its presence usually materially simplifies the composition and treatment, Wiehr's success without its use is the more noteworthy. These landscapes are remarkable in their rendition of distance. This is attained by skilful subordination of the foreground planes. The foreground in each is treated as a simple dark mass, utterly free from distracting detail. Successive planes behind are progressively lighter in tone up to the extreme distance, — a truthful statement of facts too often neglected by photographers.



WILLIAM C. MILLER
THE LOTUS GARDEN

The most academic of the compositions is that entitled "The Birches," where the space arrangement is one that is very common in landscape pictures. The house in the middle distance, half hidden by the hill, imparts at once the idea of mystery and of human interest, and the shadowy hills behind successfully convey the feeling of vast distance. In "The Meadow" again we have to a remarkable degree the idea of distance represented by successively lightening planes. The interest is again carried through the picture by the expedient of treating the foreground as a single mass of dark. In "Moorland" the artist has made a success with very little material. The composition is very pleasing, and everything combines to irresistibly lead the eye seemingly for immense distances across the solitary and interminable plain.

The portraits are all admirable specimens, and especially to be noticed in two is the pleasing treatment of the hands. This is a point on which photographers are apt to stumble, either in placing or in values, but here the flesh tones are properly subordinated to the greater interest of the faces, and neither in key nor in position do they unduly distract the attention. "The Brothers" shows a pleasing solution of the difficult problem of satisfactorily arranging two figures. The portrait of the young girl suffers possibly from the strong lines of embroidery, emphasizing

again the importance of simple clothing or drapery for photographic subjects. "The Widow" is a strong piece of work, but the lighting is possibly a trifle harsh. The composition is good.

The Farmer's Early Springtime Task, by Charles W. Dearborn. — A picture that shows good composition and at the same time expresses life, sunshine, and atmosphere, stands a good chance of being a "joy forever" to the maker. Attention is first drawn to the leading lines of the picture. Here we note the newly made furrows in the moist earth and follow the last row just turned, to the figures, the story-telling portion of the picture. The orchard in bloom in the middle distance forms another interesting line and fortunately helps the color values and adds an additional touch to the springlike appearance. Mr. Dearborn has caught one of Nature's most interesting moods.

Whither and Whence? by George W. Leighton. — This is reproduced from a large gum print in which suppression of detail by local development has been resorted to in order to emphasize the rendering of atmospheric qualities, and to envelop the principal figure in the mystery suggested by the title. The placing of this figure is excellent. The idea of making all the movement lie above the central line is one which might well be more often employed. The figures in the background are sufficiently defined to give the idea of a busy street, and yet the wanderer is isolated enough to give the idea of solitude among a multitude. The feeling of oppressive mist and occasional showers is well given. The black line across the sidewalk seems unnecessary, but the spot on the right is well introduced. On the whole, this is one of the pictures where suppression of detail and definition aid still in conveying an idea, and are hence justifiable.

Over the Hill, by W. A. Boger. — The title of this picture is not echoed with entire success by the picture itself, as the foreground absolutely fails to give any impression of sloping ground. The entire absence of middle distance and background except for the ill-defined clouds, of course predicate the downward slope beyond. An expedient which might have helped the illusion would have been the representation of the same objects from a much greater distance, thus bringing the horizon nearer the top of the picture space. The arrangement of line is pleasing, but the treatment of the foreground lacks in the mastery shown by Wiehr's pictures previously criticized. This point of decreasing values with increasing distance deserves more study than photographers have yet given it.

Brouillard Au Port, by A. Gomez Gimeno. — The chief charm of this picture is in the beautiful rendering of values. The detail is quite subordinate; the cart and the figures in the foreground make a strong point of interest, while the masts and small cart in the distance form a secondary interest, which, with the space above the right hand portion of the picture, serves to balance the dark spot in the lower left-hand corner.

Annetje, by Elizabeth F. Wade and Rose Clark. — The frontispiece of this number is a charming child study, the original of which is in sepia platinum. The posing is easy and the innocent expression of the face particularly noteworthy. In a key lower than the tone of the face are the plump little hands, which add expression to the picture. The whole composition is simple and suggests paintings of the old masters. This print received a gold medal at the Pan-American Exposition, Buffalo, 1902, and a gold medal again at Turin, Italy, in 1903. Mrs. Wade and Miss Clark carry on their photographic work together in a studio in Buffalo. Mrs. Wade is well versed in things photographic, as our readers know, while Miss Clark, an artist, takes pleasure in posing and arranging, with Mrs. Wade, the many subjects that bow before their throne.

After Pond Lilies, by Ward E. Smith. — This picture appeals to us at this season of the year because of its timeliness and story-telling qualities. Here the composition is simple and the motive easily understood. The lower and darker portion of the picture is balanced by the lighter upper half, while the figure of the boy, a little to the right, makes an interesting light spot and pulls together the different tones of the picture.

Evening Symbols, by P. W. Wood, Jr. — This is merely an expression of a mood of Nature and there is little attempt at composition, other than that the horizon line is well placed at about one third of the distance from the bottom. It is taken principally because it pleased the pho-



P. W. WOOD, JR.

EVENING SYMBOLS

tographer and he wished to show this phase of Nature to others through the medium of his camera. Many of us are quite satisfied in being able to express in some way a bit of landscape or scene which pleases our particular fancy and find that if others enjoy and appreciate this scene, that recognition is quite reward enough. Try and keep your picture simple in detail and composition, and you will make much stronger work.

Under the Pines, by F. E. Coombs. — Mr. Coombs has produced a rather unusual piece of decorative photography. A total absence of aerial perspective, which should not be regarded as a photographic defect, recalls the work of the Japanese and some sections of the later French schools, and strikes a new note in photography. The figure is well placed and well rendered. The quaintness of the costume seems quite in keeping with the decorative effect of the panel.

A Safe Hit, by Burgh Werner. — This represents the exciting moment when, with all the bases full, the sharp sound of the fairly hit ball sets in motion every man in the field. The maker has been successful in catching the entire field with every man on the alert or in rapid motion. The picture is particularly happy as, though nine men are running at top speed, each of them is depicted in a position which appears natural and expresses rapid motion. This is a piece of instantaneous work of which the maker may well be proud.

The Lotus Garden, by William C. Miller. — This print won first prize in a competition given by the Albany Chamber of Commerce, which was open to pictures reproducing the civic beauty of Albany. It represents a scene in one of the city parks and is interesting as showing how a good picture may sometimes be produced even in a formal park. The foreground is interesting, and the fountain is placed in exactly the proper spot to complete the composition.

On Buckthorn Island, by W. H. Porterfield. — This picture, which was exhibited at the annual exhibition of the Buffalo Camera Club and also received honorable mention in the last annual contest of the PHOTO ERA, is a study in composition by vertical spacing. The arrangement is successful and pleasing, but the high light is strong and too central to produce the happiest effect. The maker of this picture likes these effects of strong light in the center of his pictures which, while sometimes very permissible, must be used with great moderation.



FERD FLODIN

FROM THE TERRACE

From the Terrace, by Ferd Flodin. — Here is a case in which the hackneyed problem of representing a prospect through an opening is handled with somewhat better success than is often the case. This is due to the subordination of the top of the opening which makes the right-hand pillar an important and semi-independent element in the composition, while still making evident its relation to the rest of the structure. The atmospheric quality, successfully rendered, turns a rather uninteresting group of buildings into a strong decorative feature.

PRACTICAL HINTS FROM FOREIGN SOURCES

TRANSLATED BY FRANK R. FRAPRIE

Rules for Gum Printing, by Otto Scharj.— Use dull days or evenings to prepare a stock of sized paper, both rough and smooth. If the paper is dipped several times in hot water, and dried after each immersion, it will not thereafter stretch or shrink. My size is a solution of glue, anywhere from three to ten per cent, which is applied warm with a brush and hardened with formalin after it has dried.

First make a good gum print from your small original negative, then thoroughly consider the color, trimming, and intended changes. Then make the enlargement, using only that part of the negative which was decided on when trimming the original. In enlarging, focus more or less sharply, as decided from study of the original. Suitable changes in the character of the enlarged negative may be made by over or under exposure in making it or the transparency.

Print your paper with a photometer as soon as it is dry and develop it immediately, or the same day without fail, as the continuing action of the light is very considerable, and must be taken into consideration when the completion of a print has to go over from one day to the next, on account of failing light. Never hang prints to dry in or near rooms in which cooking is going on, as on giving the paper a second coating in this case, numerous spots will develop to which the pigment will not adhere.

Always expose sufficiently, never too little. Use for development first cold, then warm water, and when necessary, sawdust. The latter is very useful in selective development. Cover portions sufficiently developed with pieces of wet filter or blotting paper.

Judge the color and strength of the print when dry. When making large prints, make tests with small pieces of paper. The satisfactory test piece is then laid in the water again, for comparison with the large print being developed.

Spotting should always be done with color scraped from the edge of the print, which will exactly match. A little gum solution must be painted on the spotted places, or they will appear duller. After spotting lay the print in a two to ten per cent gum solution, taking care that no air-bubbles remain on the picture surface, and then hang up to dry. The picture side should not be touched with the fingers before this has been done, or the gum solution will adhere only after hard rubbing. This bath makes the whole tone, especially in the shadows, more brilliant.

To mount the finished print, lay it face down on a card and moisten the back with a sponge until it lies perfectly flat. This thorough moistening is very important, especially when the print has been coated several times. It must be done from the back, or the surface will show spots. The picture must be rubbed down on its support with smooth paper, as, if blotting paper is used, the fibers stick to the print. (*Photographische Mitteilungen*, 1905, 42: 53-55.)

Homocol Bayer.— Under this designation the Elberfeld color factory has introduced a new, so-called panchromatic sensitizer. Like other new agents of this kind, it belongs to the family of cyanines. It is soluble in water and alcohol, and the color is destroyed by acids. Alcoholic solutions keep well when protected from air and light. Homocol is insoluble in ether, but dissolves in a mixture of 2 parts alcohol and 1 part ether. To sensitize bromide dry plates, they are bathed two minutes in this solution: 1 to 2 ccm. of alcoholic homocol solution 1:1000; 5 ccm. ammonia; 100 ccm. water. Plates sensitized with homocol keep for fourteen days. (*Photographische Mitteilungen*, 1905, 42: 88.)

On the Changing of Pictures Toned with Uranium.— Louis Lemaire has studied the changing of pictures toned with uranium and believes that the origin of this phenomenon is the action of air on the remaining ferrocyanide of silver. This change may be avoided by sealing the picture under glass, and naturally does not occur when the silver ferrocyanide is removed by a suitable reagent. After toning the print may be treated for five minutes in a 1:1000 solution of carbonate of soda and then with dilute nitric acid, until the whites are clear. The print will then be much more permanent. (*Bulletin de la Societe Francaise*, 1905, 21: No. 3.)



BURGH WERNER

A SAFE HIT

Making Paper Negatives Transparent.—The following varnish is recommended for this purpose in *Photograph* No. 10: 30 parts rectified turpentine; 10 parts rosin; 10 parts Mexican or Indian elemi resin. The rosin and the resin must be pulverized as finely as possible. The turpentine is added and the mixture melted by gentle warming, stirring meanwhile with a wooden paddle. After melting, the mass is allowed to cool, and then from 20 to 30 parts of turpentine added, as may be necessary to make fully fluid, and also 8 or 10 drops of castor oil. This varnish is brushed on the back of the negative as long as the paper will absorb it, and the excess rubbed off with a dry rag. The N. P. G. recommend for their negative paper a varnish composed of 1 part of Canada balsam dissolved in 5 parts of rectified turpentine. Castor oil with alcohol is not to be generally recommended. (*Photographische Mitteilungen*, 1905, 42: 106.)

Relative Sensitiveness of Plates and Papers.—Max Miane gives some figures showing the respective speeds of plates and papers, from which we select the following as of interest to American readers: Lumiere Sigma plate, 0.33; Eastman Permanent Bromide Paper, 3; Eastman Contact Bromide Paper, 12; Special Velox, 90; Carbon Velox, 360. (*Photo Revue*, 1905, 17: 98.)

TEN PER CENT SOLUTIONS

A correspondent is much perturbed because Mr. Riley, in the April number, gives directions for using 45.5 grains of potassium bromide to make a ten per cent solution, while he has always been taught that the proper quantity was 43.8 grains. We take the opportunity first to state that a real error exists in the article, as 45.5 grains will make only one ounce and not ten of approximately ten per cent solution. As to the exact number of grains, this is a matter of comparatively little importance. Anywhere between 40 and 50 grains in an ounce of water will make a solution which is perfectly satisfactory, because the quantity of this solution used is wholly a matter of experiment or personal taste. If, however, our correspondent is a stickler for quantitative accuracy, we would say that both figures are wrong. According to the chemical dictionaries, a ten per cent solution of potassium bromide has a specific gravity of 1.070. A fluid ounce of the solution will then weigh 468 grains, and a ten per cent solution must contain 46.8 grains of potassium bromide in 1 fluid ounce of solution.

THE NIGHTWIND

By OSCAR VON ENGELN

At eve, as the last gray banners of day
Are fading away in the west,
The Nightwind marshals the forces' array,
Which answers his age-old behest.
His legions unnumbered are weaponed with cold;
Daring, freefaring, unconquered and bold
Is the Nightwind.

A few short passes, which stir the dried weeds,
He stretches his mighty arm—
Unloosed, his minions, wild crying, he speeds,
Sounding wide-reaching alarm—
This emperor old who rules so grim,
When dark the sky unstarred folds in,
The Nightwind.

While the cold grips hard, and the clouds scud fast
And eery's the feeling without,
His armies are raiding the darks so vast
Which compass our earth about;
He vies with the rush of the waves on the sea
And sways the dim forest which hangs on its lea,
O, the Nightwind.

And oft as I list to his voicing so weird,
Musing betimes at my fire,
A blast, a gust, down the chimney there veers,
Crouch I the flames the nigher,
'Tis good to be housed when, O Nightwind, you move,
With your wheer-a-wheer and your whoo-ah-whooh;
Bleak, shrill Nightwind.



EDITORIAL DEPARTMENT

NATIONAL CONVENTION

The Quarter Centennial Convention of the Photographers' Association of America will be held in the Mechanics Building, Boston, from August 8 to 11, inclusive. All signs point to a record-breaking convention. It is now fifteen years since the organization met here under the presidency of George W. Hastings, and the lusty infant has now grown to the first stages of enlightened manhood.

Within this same period of time photography itself has made wonderful strides. It has entered into almost every branch of endeavor in the scientific world, and the possibilities of the artistic photograph have been recognized by the highest court of appeal on fine arts in the world — the Paris Salon. In brief, its achievements have been little short of marvelous. Like electricity in the scientific world, we believe that photography is the coming agency in the art world, because it furnishes a solution to the artist as to how best to combine the useful and the beautiful.

For all these reasons, we suggest that this Quarter Centennial Convention be planned so as to take cognizance of these facts and make them known to the world. Let it be a milestone and mark a distinct epoch in the progress of photography. With commendable generosity the Executive Board has appropriated from the Association Treasury \$800 in gold to be given as an award for the best photographs exhibited in competition. There is a grand portrait class consisting of six pictures, to be not less than thirteen inches one way, for which three prizes consisting of \$300, \$150, and \$75 will be given, and a general portrait class consisting of six pictures, to be nine inches one way or less, for which three prizes of \$150, \$75, and \$50 will be awarded. All pictures will be passed upon by a competent Board of Examiners, and such as shall be considered of a high degree of excellence will be awarded a certificate of merit. The question of reviving the prize system has caused much discussion. The purpose is to make this convention a test case as to whether prizes or no prizes will assure the best results. It will assist coming administrations to solve this much-vexed problem.

REJECTED MANUSCRIPT

One of the greatest problems that confronts us, in the daily round of editorial duties, is how to return rejected manuscript without giving offense. The PHOTO ERA is now the recognized leading photographic art journal of the country. As such our pages are thoroughly read and our opinions are highly held by thousands of discriminating readers. The expert professional and amateur photographers of the world are among our subscribers, as well as men and women interested in artistic and educational works. People who travel, the horseman, the automobilist, the sportsman, the golfer, and the yachtsman all buy the PHOTO ERA, and read it carefully from cover to cover. With such a constituency, it becomes necessary to be careful and discriminating in the selection of reading matter. In the flood of manuscript submitted we are oftentimes obliged to reject some as unsuited, that are otherwise of a high quality of excellence.

How best to do this without hurting the feelings of the oversensitive contributor is the editor's task. There are several formulas suggested. In England the manuscripts are returned with the formula, "Declined with thanks," says the London *Chronicle*. The struggling French author is accustomed to the stereotyped phrase, "Impossible, mille regrets." But how much better they manage this affair in the Far East! What does a Chinese editor say about the manuscript he is returning? "We have read it with infinite delight. By the holy ashes of our ancestors we swear that we have never seen so superb a masterpiece. His majesty the emperor, our exalted master, if we were to print it, would command us to take it as a model, and never publish anything of a less striking quality. As we could not obey this order more than once in ten thou-

sand years, we are compelled to send back your divine manuscript, and beg a thousand pardons." We are contemplating imitation of the Chinese editor.

ENTERTAINMENT FUND

A single discordant note has been heard in relation to contributions solicited for the entertainment fund of the National Convention to be held in Boston next August. It emanates from *The Photographer*, of New York, which has just celebrated its first birthday, and like all babies of that age is, no doubt, trying to make its importance felt. *Wilson's Magazine*, also of New York, has reprinted the article with the following comment: —

"In plain English, is the entertainment feature of the National Convention, at the expense of the manufacturers and dealers who doubtless feel obliged to contribute whether they believe in it or not, either necessary or wise? We believe not," etc.

This seems to us a very narrow view to take of this, one of the most necessary and important features to a successful convention. So far as we have been able to learn, the manufacturers and dealers are in hearty accord upon this subject. The contributions are entirely voluntary, not levied or assessed, as *The Photographer* would have us believe, and the money is spent in legitimate entertainment for the entire body of the convention. This year the funds of the treasury have been drawn upon very heavily for prizes, and we believe that the contributions for the entertainment fund will be more welcome than ever before. However others may feel, Boston will not be found wanting when the time for the convention arrives.

A POPULAR SUCCESS

THE PHOTO ERA for May with its special feature of American musicians, has created a widespread interest not only among our friends and regular subscribers, but in the photographic world in general, the domain of art and musical circles. In short, it has caused a sensation and has called forth expressions of delight from the artists portrayed and from their numerous admirers, also the highest encomiums from the press. Musical publications, in particular, have shown the keenest appreciation of the artistic merit of the portraits of men and women, whose doings it is their business to chronicle, and displayed a generous spirit in praising our venture and recognizing the greatly superior merit of our selection and methods of reproduction.

As to the musicians, who contributed so largely to the popular success of the May PHOTO ERA, they surprised us by their quick appreciation of its pictorial and literary features, and many of them are now on our books as subscribers.

Under such circumstances it is impossible to conceal our gratification, and we accept with a profound sense of gratitude the many agreeable and flattering things that are being said about the PHOTO ERA, whether by painters, photographers, or musicians.

PORTRAIT PHOTOGRAPHY VS. PAINTING

THE art critic of the *Transcript*, Boston, Mass., in commenting on the May issue of the PHOTO ERA, takes exception to our statement that the "photographer has entered the arena of art, prepared to measure lances with the painter and the sculptor." He says that to express such an opinion is "to indulge in an idle boast and expose the pretensions of the photographer to well-deserved derision." The attitude of this critic — and he naturally has numerous sympathizers, notably among the class of painters described in our article entitled "American Musical Genius as Interpreted by Photography" — is not at all surprising; indeed, nothing less severe was expected from that quarter. As a loyal friend and champion of the painter and sculptor he can ill afford to recognize the status photography now occupies among the fine arts. Were he to do so, he would undoubtedly incur the displeasure of the artists whose cause he champions, if, indeed, he would not be repudiated by them. "It's a wise child that knows its own father," and this critic will take care not to desert his "colors." We admire his loyalty, which is worthy of emu-

lation. It is singular, however, that his ire was not aroused by our other, equally telling, statements showing in what respects photography is on an equality with painting; nor has it been denied that photography, practised by a true and capable artist, can depict human character as successfully as painting. The critic of the *Transcript* has not seen fit to criticize the action of the last Paris Salon in admitting a large collection of photographs, nor have we heard that he has rebuked the twenty leading painters of New York, among whom were John La Farge, Kenyon Cox, Childe Hassam, Will H. Low and Ben Foster, and who constituted the jury of the First America Photographic Salon. "A remarkable series of portraits of American musicians" constitutes the extent of the *Transcript's* criticism of a collection of pictures, some of which we challenge any painter in Boston or any other American city to surpass in power of expression. We will not consider even color, for that feature is of little consequence in portraying outward expression of intellectual force. We simply present photography as a means of interpreting what a capable artist sees in the features of a distinguished person, be it character or emotion. Certainly the stereotyped charge of photographic literalness cannot be applied to our series of American musicians, for our artists have been remarkably successful in depicting the essentials at the expense of less important features.

Gounod's noble "Ave Maria," although composed for the human voice, has been sung on a stringed instrument, violin or 'cello, and on the organ, in a manner fully as telling and as satisfying. Music written for the piano has been transcribed for the orchestra and *vice versa*. Oftentimes a band of only four musicians will interpret a certain composition with such impressiveness as to draw tears, where a full orchestra, performing the same piece, would scarcely stir the emotions. It depends simply on the manner in which the thing is done. Several of the musicians portrayed in our May number confess to never having had pictures taken of such power and individuality, and are mystified at the ability of the photographer to bring about such remarkable results. Old personal friends of those musicians have expressed similarly strong views. Comments like these are rarely heard at our art exhibitions, at which oil portraits by local artists are shown. Not even the color of the complexion is natural — but we apologize, "it was as the painter saw it," and that would alter the case. Of course there are exceptions to every rule, and it is true that, once in a while, we hear of a local artist doing a likeness of some one that is above the level of mediocrity; but among the hundred or more oil portraits, executed in Boston annually, it is safe to say that very few of them are as satisfactory, from the standpoint of fidelity, as a photograph by one of our local artists of the camera. Of course, if the painter sets out *not* to make a likeness, but has some other object in view, that is another matter, but in most cases he simply is not equal to the demands of the occasion. It is understood that we make no such charge against portrait painters like Vinton, Vonnob, or Chase.

A TEST OF COLOR PHOTOGRAPHY

Much interest is now being manifested by the scientific world in the total eclipse of the sun, which, occurring August 30 of the present year, will be visible on land in northwestern Canada, Labrador, Spain, Algeria, Tunis, Tripoli, Egypt, and Arabia, this being the course to be traveled by the lunar shadow, which will measure something like eighty miles in width. Scientific parties, composed principally of astronomers, equipped with suitable apparatus, will observe and study this wonderful phenomenon, and for the first time an attempt will be made to apply the three-color process of photography, with a view toward securing color records of the chromosphere and corona. In all probability a triple camera will be employed, with uniform lenses, screens, etc., as the exposures will need to be made simultaneously. The apertures of the diaphragms will be properly graded, in order to conform to the difference in sensitiveness of the different colors, so that one exposure will be correct for all. The display of colors of a total solar eclipse is wonderfully beautiful, far surpassing in grandeur the aurora borealis.

THE ROUND ROBIN GUILD

*Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner.
Membership may be obtained by sending name and address to the PHOTO ERA.*



JOHN W. SCHULER

FIRST PRIZE

JUNE

“June is the best of the world, my friend,
June is the best of the year;
Behind is the springtime cold and sweet,
Forward the summer’s feverish heat,
The best of the year is here.”

Yes, truly, the best of the year is here. No wonder poets the world over sing in many a rhyme and rune the praises of June, dear June.

Our old friends, the trees, appear in their most charming array. With what grace the elm has wreathed itself; what luxuriant racemes the horse-chestnut hangs out, like torches borne aloft; and what bloom and what sweetness drop from the gnarled stems of the apple-trees.

The amateur will find June the best month of all the year to make photographs of his special friends among the trees.

I wonder if we half appreciate the trees. They are such everyday affairs, like the air and the sunshine, that we simply enjoy them and forget to be grateful for them. They are like the faces of our friends of long, long years, — so familiar to us that we do not remember or note whether they are beautiful or otherwise.

Last season one of the subjects for competition in the Round Robin Guild was “Trees,” and so many charming studies were received that the editor was led to wonder why more attention had not been paid to trees as subjects for photographic skill. Let the amateur who wishes a distinctly original and interesting collection of pictures spend a little of his photographic time in making studies of interesting trees, and add to the interest of his collection by gathering quotations relating to the individual species he has photographed.

Such a bit of work would be very worth while.

COMPOSITION IN LANDSCAPE

NATURE’S summer picture-book is open at its most beautiful place, and the illustrations with all their exquisite colorings show beauty in even the most commonplace subjects. Viewed in miniature through the lens of a camera they are doubly enchanting, and one is impelled to make reproductions with that bit of magic glass. But these pictures, when transformed into the black and white of the photograph, are not always pleasing; in fact, they seem in many cases not worth the trouble of making, to say nothing of the expense.



J. E. MARS

SECOND PRIZE

pal object is either to the right or left of the center. The established rule is that it should be so placed that it will be about two fifths of the way from either the right or left side of the picture, but the distance will depend largely on the position of the other objects included in the picture. The principal objects having been selected, try to arrange the camera so that the lines in the picture appear to lead up to it.

The horizon line must be carefully considered. It must never cut a picture in two in the middle. The proper place is about a third of the distance from the top or the bottom of the picture. If the adjustment cannot be made in

Some of us fail to look for the reason, and do not know that certain artistic rules and laws must be followed if one wishes to produce an artistic picture, whether the medium employed be brush or pencil or lens. These rules are called the laws of composition, and teach where a picture should begin, where it should end, what should be included, and what should be excluded; and it is the following or the neglecting of these rules that makes the great difference in the merits of a picture.

The laws of composition briefly stated are: first, the harmony or unity of the design; second, the balance or symmetry of the objects composing the picture. By "harmony" is meant the introducing and arranging of the objects in a picture so that each shall seem to belong to the special place assigned it; and by "balance" or "symmetry" is meant the uniting of these objects so that they constitute a perfect whole.

The amateur usually considers landscapes the easiest of all subjects, because they seem already composed and all that he has to do is to expose his sensitive plate; but to be an artistic landscape photographer — or, rather, to make artistic photographs of landscapes — the laws of composition must be as strictly obeyed as when making a painting of a landscape.

To do this the point of view must be carefully selected, and in the selection of the point of view lies the artistic merit of the picture. The first thing to be considered is the principal object, which need not necessarily be the largest object, but the one of most interest and the one to which the eye is first directed when looking at the picture.

Remembering the center of the picture is its weakest point, move the camera so that the princi-

pal object is either to the right or left of the center. The established rule is that it should be so placed that it will be about two fifths of the way from either the right or left side of the picture, but the distance will depend largely on the position of the other objects included in the picture. The principal objects having been selected, try to arrange the camera so that the lines in the picture appear to lead up to it.

The foreground must be thoughtfully studied. Foreground is a term which often puzzles one who does not understand sketching or drawing. It signifies the portion of the picture nearest the spectator, and its use is to give the effect of distance, of proportion, and of perspective, all of which are seen when looking at the landscape itself, but not always seen in the photograph. To produce this effect in the picture of the landscape some small object, such as a clump of bushes, a stump, or a pile of rocks, may be brought into prominence, but should be so placed as not to interfere or draw attention away from the principal object.

The "glory of color" in the landscape cannot be reproduced in the photograph, and one must depend on a proper distribution of the lights and shadows to produce artistic effects. A small piece of smoke-colored glass will be found useful when taking landscapes. Placed before the lens it transforms the colored reflection on the ground glass into a monochrome, and so one can judge better what the picture will be in the photograph.

The artist puts breadth into his picture by introducing long lines of light and shade, preserving the balance of both. There is one point where the light is the strongest, and another where the shadows are deepest, with gradations of light and

shade between the two. One should look for this effect on the ground glass of the camera. Strive to avoid chalky high lights and dense shadows with no detail. By choosing the early or late part of the day, when the shadows are long and not so black, one can manage this part of the work very cleverly.

Do not try to include too much in a landscape picture. Sidney Smith's advice to "take short views" might well be followed by the amateur who takes landscapes. An extended view is seldom very interesting, for it leaves little to the imagination, while a glimpse of a winding path, a secluded nook, or a woodland vista is always a pleasing picture.

The points to be observed may be summed up briefly as follows:—

Never have the camera so placed that the principal object shall come in the center of the picture.

Arrange the lines of the picture to lead up to the principal object.

If the view be an extended one, keep the horizon line below the center of the picture; if a short view, let the horizon line come above the center of the picture.

Avoid a strong high light in the center of the picture.

Use the lights and shadows to obtain breadth.

Do not take a landscape picture unless the scene is worth taking.

ON PRINTING AND MOUNTING PHOTOGRAPHS

IN spite of all that has been said and written about the finishing of prints, there are amateurs who consider the "picture the thing" and the printing and mounting matters of secondary importance, so we are constantly being confronted with collections of photographs all printed, toned, and mounted in the same way. They remind one of nothing so much as a shelf filled with bottles of some patent medicine, each one repeating the label of the other.

Photographic printing is an art, the proper mounting of the print is an art. Each negative has a distinct individuality and requires special treatment to bring out its best qualities. One must first determine what method of printing is best adapted to the negative, and what tone will be the most suitable. With the many different varieties of printing papers one should never be at a loss for a suitable paper for any negative.

Perhaps the first thing to consider is the texture of the paper, for printing papers range all the way from very rough to the fine, smooth, satiny finish. The rough papers are appropriate for portraits and landscapes with broad masses of light and shadows. Some waterscapes, especially with the sea in a riotous, turbulent mood, look better when printed on heavy, rough paper. Negatives with a great deal of detail should be printed on smooth paper, the grade of fineness or smoothness depending



F. S. ANDRUS

THIRD PRIZE

on the negative. The very finest, smoothest papers are best adapted to bits of landscapes, "short views" so to speak, or quiet waterscapes. Interiors also are better adapted for the smooth papers.

The beginner's paper—the blue print—is suitable for waterscapes which do not include much land or shore, and owing to the wide latitude of tones which may be obtained on this paper, by varying the length of exposure one may produce tints varying from the delicate silvery blue of the quiet inland lake to the deep, dark, unfathomable blue of old ocean. Waterscapes are really the only pictures adapted to blue-print paper, though blue-prints are very taking when used for decorative photography.

Waterscapes are more artistic printed in grays or in black and white. A shore with the surf rolling in and the horizon line far away is very artistic printed on rough paper and toned in a warmish gray.

The tone of landscape pictures may be a warm brown, a sepia, or a gray, according to the character of the negative. A warm brown would be the color to choose for a sun-lighted landscape, where the trees and shrubbery are thick and heavy. A sepia tone is found pleasing for an extended view, while warm gray tones are appropriate for morning or evening scenes, and cold grays for cloudy scenes,



WM. O. MEYER

FOURTH PRIZE

or for early spring, late fall, and winter pictures.

The same care in selecting papers for portraits must be exercised. Portraits of elderly people, especially if the hair is gray, should be printed in grays or blacks and whites. If the negative is a large one, then rough paper should be used; and if the lines are a little under focus, one obtains the effect of a charcoal drawing. Sepia tones for young people, and occasionally a reddish brown for a blonde subject, will be found more pleasing than grays; while the pictures of children are, as a rule, very charming done in soft warm browns.

If one has a "colored" subject, no tone will be found better than the tawny brown made by slightly toning an Aristo platino print and then fixing it in hypo. The toning must be very slight, and the printing carried rather deeper than for the ordinary print. In finishing prints in this manner care must be taken to avoid the spotting of the print. To avoid this, wash the print through several changes of water, then place for five minutes in a salt bath containing $\frac{1}{2}$ ounce of salt to 20 ounces of water. Transfer the print at once to the hypo bath, the strength of which is 1 ounce of hypo to 20 of water. Wash, and dry as usual.

WATER CRAFT

WHAT a study in progression it would be if a collection of water craft could be arranged, beginning with the rude dugout of the aborigines, and ending with the stately ship of civilization which in its complete equipment Emerson says, is "the abridgment and compend of a nation's art."

Water craft have always been favorite subjects of the amateur. To one who lives in a sea or lake port come many opportunities for making

interesting studies, and he has the advantage of his inland coworker in that if his attempts are unsuccessful he can easily try again.

The occasional visitor to the seashore has no the advantage of this experimental knowledge. He has perhaps but a limited time to spend, and having no previous experience to guide him he makes snapshots of the craft that attract him, hoping that under the magic of development he will secure some excellent pictures.

The uninitiated do not realize how strong is the actinic light at the seashore. Even on a foggy day one may make very quick exposures and obtain fine pictures. Indeed, it is on foggy and misty days that one secures

the finest atmospheric effects.

The late afternoon and the early morning are the best times of day for making pictures of water craft, or of waterscapes.

The vantage point for making pictures of water craft is from the deck of some other vessel, preferably a steamer, as this vessel is not so much influenced by the action of wind and wave as the sailing vessels. Excursion steamers ply to and fro between points of interest, or ferryboats run back and forth between certain points. For five cents one may ride on a ferryboat half a day if he chooses, thus obtaining many fine opportunities for catching pictures of many varieties of water craft.

The point of view must be well and also quickly chosen. Both front and rear views of a yacht make pleasing pictures. Full-rigged sailing vessels are always interesting, and a view of such a craft with all sails set cannot fail to be pleasing. A direct broadside view is the most uninteresting. Very beautiful effects may be obtained by photographing a vessel directly against the sun when this luminary is low on the horizon. Clouds in the sky add greatly to the artistic beauty of such a picture. If the sun is very bright one obtains almost a silhouette picture of the vessel when photographed directly against it.

To catch a vessel at its very best one must be master of his camera, and have it adjusted for instant use when comes the opportune moment. As the reflection is seen in the finder, the vessel appears to move slowly and the novice is deluded into thinking he has ample time, but the contrary is the case. The boat on which one is stationed, and the one to be photographed are both moving rapidly. All at once the approaching vessel looms

large in the finder an instant, then it is gone, and unless one's movement has been as swift as the proverbial shuttle of the weaver, the moment has passed and he must wait for another opportunity.

Vessels lying at anchor offer artistic possibilities. The time of day for photographing them should be either early or late in the day, so as to secure the shadow effects which add so much to the composition of the picture.

In photographing small craft the lower deck will give the best point of view, but for larger craft the upper deck should be the choice.

Use a medium-speed plate and as large a diaphragm as possible without overexposing. Develop slowly, and work up detail in the shadows.

No matter how skilful one may be, there is always a certain per cent of failures, so the beginner must not expect his studies of water craft to be perfect, but if he obtains a dozen good negatives from his visit to the seashore he may feel well rewarded for his work.

ROUND ROBIN GUILD COMPETITION

SUBJECT for the June competition, "A Country Road." Closes July 31.

First prize: A yearly subscription to *Art in Photography*, value \$10.00.

Second prize: \$5.00 in photographic books or magazines, published or advertised by us, to be chosen by the winner.

Third prize: The choice of a yearly subscription to the PHOTO ERA or the *Practical Photographer*.

Fourth prize: One number of *Art in Photography*, value \$2.00.

SUBJECTS FOR COMPETITION

May. — "Animal Study." Closes June 30.

June. — "A Country Road." Closes July 31.

July. — "Water Craft." Closes August 31. Any marine pictures in which water craft are an important feature.

August. — "Trees in a Landscape." Closes September 31. Any picture in which more than one tree enters as an important feature of the composition.

September. — "Foreground Study." Closes October 31. Any picture in which the foreground or object in it forms the chief interest. The space above the horizon line may not be more than one quarter of the picture.

RULES

Any number of prints may be submitted by any member of the Round Robin Guild. Membership in this is free, and may be obtained by application to this office. One or two recent prize winners who are not members of the Guild may obtain their prizes by joining.

Every print must bear on the back the title, author's name and address, and Guild number,

with the words "Round Robin Guild Competition." Unsuccessful prints will be returned if postage is enclosed and request to that effect written on back of print. Prints not so marked are liable to destruction after judging.

AWARDS

THE following awards have been made in the "Snow Scene" competition: First prize: John W. Schuler, "Winter." Second prize: J. E. Mars, no title. Third prize: F. S. Andrus, "A Country Road." Fourth prize: Wm. O. Meyer, "December Twilight." Honorable Mention: —

R. C. Born	"The Woods in Winter"
R. H. Calely	No title
R. I. Caughey	"The Old Orchard"
Edgar D. Coleman	"The Hillside"
Fred. Farrington	"Cat Tails"
J. E. Mars	No title
Wm. O. Meyer	"Across the Snowy Fields"
Albert H. Moberg	"Near Spring"
W. A. Payne	"Nocturnal Solitude"
Phil M. Riley	"January Sunshine"
Wm. D. Ruse	"A Winter Scene"
John W. Schuler	"Close of a Winter Day"
William Spanton	"Winter"
William Spanton	"In Winter's Grasp"
R. W. Steven	"In the Glen"
Cora A. Tilden	"Snow Scene"
Harry D. Williar	{ "The Village in Winter"
	{ "A Winter Evening"
	{ "In Winter's Grasp"
Author unknown	{ "The Mountain Spring"
	{ "The Frozen Brook"

SEPIA TONES ON GAS-LIGHT PAPERS

A BATH for obtaining sepia tones on gas-light paper is made after the following formula: —

Hyposulphite of soda, 5 oz.; powdered alum, 1 oz.; granulated sugar, 1 oz.; water, 35 oz. Heat the water to boiling and dissolve the hypo in it, then the alum, and then the sugar. See that each ingredient is dissolved before adding the next. When solution is cold, filter. Take a circular piece of filtering paper, fold it together in the middle, then into quarters, then back and forth in folding fan fashion. Open out and put into a glass funnel which has been set in the bottle into which the solution is to be filtered. The creases in the paper prevent it from adhering to the sides of the funnel when the liquid is poured into it.

After the bath is made it must stand forty-eight hours to ripen and settle. To use, pour 6 or 8 oz. into a toning tray, and as much more into a metal tray that can be set over the fire. If one has no clean metal tray, use a deep toning tray and set in a pan of hot water over the fire. Place the prints in the cold bath and let them remain five minutes, then transfer them without rinsing to

the hot bath where they are to lie until they have attained the desired color. The longer they are left in the bath, the deeper will be the tone. The placing of the prints in the cold bath serves to harden the film so that it will not soften in the hot bath.

After toning put the prints into a bath made up of $\frac{1}{2}$ oz. of powdered alum and 16 oz. of water. Rinse thoroughly in this bath, then wash and dry.

The toning bath keeps a long time, and may be used repeatedly.

ANSWERS TO CORRESPONDENTS

MORRIS E. L. — You will find a small bottle of very finely powdered pumice-stone a very useful addition to your stock of photographic materials. Instead of using a retouching fluid, dip the end of the finger in this powder, and apply with a rotary motion to the places on the negative which require retouching, until the film has acquired a "tooth" sufficient to take the pencil. In most cases the pumice-stone will be better than the retouching fluid, and it usually takes the pencil better.

BERTHA B. — To clean your negatives stained by silver, immerse them in a weak solution of cyanide of potassium which is extremely poisonous. Wash well after removing from this bath. If very much stained, or if the stain is of long standing, place the plate for ten or fifteen minutes in a solution of iodide of potassium, 20 grains to the ounce. Wash well, and transfer to a weak solution of cyanide of potassium,—say, 25 or 30 grains to an ounce of water. If not successful, increase the strength of the solutions.

R. R. S. — You will find suggestions which will help you in regard to illustrating with your camera by referring to the *PHOTO ERA* for January, 1904. If you have not this number, it will be sent you from the office on receipt of price.

CORA T. — Membership in the Round Robin Guild gives you the privilege of competing in any of the Guild competitions. There is no limit to the number of prints you may submit, but it is wiser to send only a few. If you have a collection of prints you consider of superior merit, go over them carefully and reduce the number to ten, then from the ten select five, and send the five,—or better still, narrow the selection down to two or three. Your membership number and address should be on the back of each print.

M. G. HALE. — It would not be advisable to discuss in the pages of the magazine the merits and demerits of different makes of cameras. If you are thinking of purchasing a camera and wish advice, enclose a stamp to the editor of the Round Robin Guild, who will be very glad to reply.

A. N. M. — To clean from bottles the veiling produced by photographic chemicals, use spirits of salts mixed with an equal quantity of water.

If very much stained, let the solution stand in the bottle for twenty-four hours. If not very much stained, put a little washing soda, and crushed eggshells, in the bottle, and fill half full with warm water. Shake well and the coating will in most cases be quickly removed. For removing the strong high lights in your negative without action on the shadows, try placing the negative in a half per cent solution of persulphate of ammonium for five minutes. Rinse, and repeat if the high lights are not sufficiently reduced.

LAURA T. — See the article in the present number on the care of bottles containing chemicals. You will find a formula for label paste in it. If the negative shows iridescent colors, take a little weak Farmer's reducer, dip a piece of surgeon's cotton in it and rub the surface of the negative. Rinse well to stop the action after the stain is removed. If the stains are not of long standing, alcohol will remove them.

GEORGE T. — You will be able to make a print from your broken negative in which the film itself is not injured, by placing a piece of clear glass in the printing frame to support the broken negative, then tie cords to the printing frame, hang it from some projection and keep it revolving during the process of printing. This prevents the shadow thrown by the break in the glass remaining stationary long enough to leave an impression on the print.

H. D. RHODES. — By all means take films on your journey abroad. Plates are heavy to transport, take up a great deal of room, and are more liable to accidents. Films wrapped in tin-foil will be perfectly protected from damp on an ocean voyage. If your luggage will admit, why not take a developing machine and develop your rolls of negatives as they are made? You will then be able to judge whether you are making the right exposures and also to duplicate any picture which does not turn out well.

EDITH B. — You must obtain a permit from the Dean if you wish to make photographs in the interior of Westminster Abbey. A form is obtained from the Chapter Clerk on which the application is written. Have you not some friend in London who would attend to this for you before you reach England? as oftentimes there is a great deal of delay, sometimes extending into weeks. You do not need a permit for the British Museum if you use a hand camera. Before attempting to photograph anything in the Museum, obtain from the librarian the rules designating the restrictions and privileges accorded amateurs.

JOHN K. MC. — Your platinum prints which you say are dull and lifeless may be brightened and details brought out by taking artist's size, diluting it about half with warm water, and brushing the prints with this solution. Use plenty of the solution and pin up till dry.



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NOTES AND NEWS

THE Boston & Northern and Old Colony Street Railways have a plan for making the people of Massachusetts acquainted with the beauty spots along their lines by inaugurating a photographic contest, open to amateurs only. The lines of these two roads run through scenes of natural beauty which cannot be surpassed in Massachusetts, and it is to find out what spots appeal most to lovers of beauty that this contest has been started. There are everywhere, long the routes of the trolley, scenes that only need the appreciation of the photographer to bring them into prominence, and it will be interesting to observe what particular sections of these two lines are most favored. On every hand there is plenty of artistic material waiting for the appreciative to bring it into notice. The companies offer liberal prizes in cash and goods to those who take pictures that have real artistic merit and which show the most beautiful spots along their lines, no other restrictions being placed upon the field of the amateur photographer's operations.

We are advised by R. H. Derrah, the Passenger Agent, who has the contest in charge, that the following conditions will be observed:—

Photographs must not be less than 4 by 5 inches, nor larger than 8 by 10 inches in size. They must be printed on matt surface paper and mounted, and on the back of each must be plainly marked the location of the photograph and the name and address of the sender.

Thomas Harrison Cummings, editor of the PHOTO ERA, George R. King, and F. E. Bowman, all three well-known gentlemen in the photographic world, will act as judges.

The contest will close September 1, 1905, and all photographs are to be addressed to the Boston office of the Passenger Agent, 309 Washington St.

THE first annual meeting of the Professional Photographers' Society of New York was held at the Murray Hill Hotel in New York City, April 13 and 14, with Pirie MacDonald in the chair. A constitution was adopted, and the following officers were elected: President, Dudley Hoyt, of Rochester; 1st vice-president, Mr. Bradley, New York; 2nd vice-president, Mr. Byron, New York; secretary, Don Scott, Olean; treasurer, Mr. Talbot, Schenectady. Mr. MacDonald was urged to accept the presidency, but refused. Committee reports on Labor Bureau, Insurance, and Copyright were received. After a lively discussion on artistic photography, and the hanging of pictures at the annual conventions, the general sentiment being that likenesses and not pictures showing artistic individuality were wanted, it was decided that one picture by each member be hung at each convention. After business came pleasure, in the shape of a "Dutch" dinner, which very satisfactorily closed the meeting.

WE are informed that "Colorprint," the remarkable new paper for making photographs in the colors of nature, will be ready for the market by the time this reaches our readers. The advance sale has been extraordinarily large, and we are asked to say that all orders will be filled in rotation

at as early a moment as possible. Dr. Wilhelm Hesekei, a brother and collaborator of the famous savant, Dr. Adolf Hesekei, is now on his way from Europe to see that Americans are properly instructed in the workings of the new process. "Colorprint," while very simple, is of such revolutionary nature that it has been deemed best to have the advice and instruction of one who has been connected with it since its inception, as in anything new it is hardly to be expected that the most perfect results will be secured at the first trial.

American Photographers:—

The Quarter Centennial of our Association will, beyond the shadow of a doubt, transcend any meeting of like kind ever held on this Continent, and you are urged for art's sake and for the sake of that true comradeship which is such a delightful incident of artist life, to bring your wares to the show and to shake hands with the best of your fellows.

The show place, the Mechanics Building, is the best adapted of any structure in the whole country for the purpose of a photographic exhibition. It is, indeed, a faultless interior, and as perfectly suited to our purpose as though it had been built by one of us, for us.

Be assured that the people of Boston, that city deservedly known for nearly a century as "The Athens of America," know just how to treat the stranger within their gates, and with the first cordial greeting, forever dispel his notion that he is a stranger.

Don't you want to try for the prizes? Don't you want to receive words of kind and just praise in commendation of your work from men whose praise is indeed an inspiration? Don't you want, in a beautiful and historic city, in one of the noblest structures, to see, to learn, to compare, to grow?

Every detail for the success of the meeting is being carefully wrought out. If you prize your art and wish to see its best possibilities developed, come to Boston and see, and contribute to the rich stores of the beautiful scenes and faces and forms reproduced from the life of the times in which we live.

Cordially and respectfully,

A. T. PROCTOR,
2nd Vice-President, P. A. of A.

TRAITÉ ÉLÉMENTAIRE DE PHOTOGRAPHIE PRATIQUE
par G.-H. Niewenglowski, directeur de la revue mensuelle *La Photographie*, officier de l'Instruction publique, un volume in-18 broché de 420 pages, illustré de 189 figures, édit par la Librairie Garnier, 6, rue des Saint-Pères, Paris.

This complete treatise in French is designed to meet every need for instruction of the amateur who can read the language in which it is published. It gives a thorough review of all the subjects comprised in a course of elementary photography, beginning with the lens and ending with the ordinary printing processes. The more advanced printing methods, enlarging, color photography, etc., will form the subject of a supplementary manual soon to be issued.

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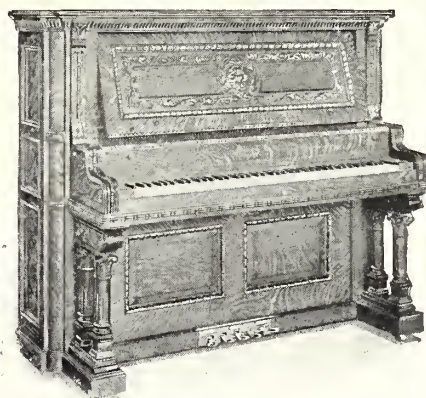
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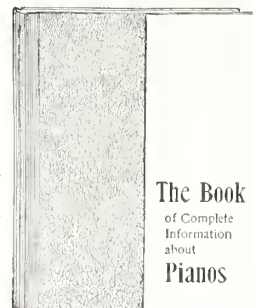
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NOTES AND NEWS

OZOTYPE IN GELATINE AND GUM MEDIUMS.

Thomas Manly. Fourth edition, 1905. London, The Ozotype Co. Price, 3d.

This fourth edition of Mr. Manly's ozotype manual, besides repeating the directions for the ordinary process in the well-known form, gives full directions for the new gum-ozotype process worked out by Robert Manly, son of the former. This new process seems to have many advantages, and will doubtless appeal to many workers. Full directions will be published in *The Practical Photographer*, No. 14, "The Gum-Bichromate Process."

THE FAIRY DREAM. Katharine D. Lawrence, with illustrations by Charles W. Pancoast. New York, Bonnell, Silver & Co.

This is a delightful story for children, which, in spite of its title, is not a fairy story, although these gentle creatures are supposed to bring the dream which gives the book its title. The story is that of the awakening of a child's heart to thoughts of charity and kindness to those in less fortunate circumstances, and is well told and entirely free from morbid sentimentality. It might well be read by every parent and young child.

THE COMMUNION OF SAINTS. Katharine Dix Lawrence. New York, Bonnell, Silver & Co.

This memorial booklet contains a poem suggested by a sermon of the Rev. Morgan Dix, and expresses in graceful lines of verse the consolation which every soul needs in hours of sorrow and parting, and which alone gives comfort at such times,—the consolation of religious hope and the future reunital of bonds here broken.

THE First American Photographic Salon was exhibited from May 15 to 27, inclusive, at the rooms of the Boston Art Club, under the auspices of the Boston Camera Club. The successful reception given it in New York, Pittsburg, Chicago, Washington, San Francisco, and Portland, Ore., was repeated, and the art-loving public of Boston was given a new conception of the present standing of artistic photography.

THE 1905 catalogue of the Century Camera Company is prepared and printed with the usual good taste in typography and illustration characteristic of the literature of this firm. It describes a line of cameras which meets every requirement and wish of the outdoor photographer, be he the beginner wishing a cheap plate camera as a vacation amusement, or the newspaper photographer required to achieve the almost impossible in the way of quick work. These cameras are built with the minutest attention to practical usefulness and excellent finish by men who have spent their lives at the task, and who are proud of the watchword, "Century Quality." While the workmanship is superfine, there is no useless expenditure of time or labor on unnecessary luxury or meaningless details. The cameras are built for business, and can be depended on to do their work

well. The catalogue is to be had at all dealers or free by mail, and we would ask every reader of the PHOTO ERA who is thinking of purchasing a new camera to write for this catalogue, and tell the makers that the PHOTO ERA induced him to do it.

THE Blair Camera Co. has issued a very handsome catalogue for 1905, which they will be glad to send to any of our readers who request the favor. The booklet describes very fully all the various styles of Hawkeye cameras and fittings. These comprise cameras which will meet almost every demand of the amateur. The well-known and long-established reputation of the company speak for the excellence of its goods.

WE are pleased to note that the city of Effingham, Ill., has begun to appreciate its most distinguished townsman, Lew Bissell, President of the Illinois College of Photography. It has singled him out for special honor by nominating him for mayor of the city. Such honors we believe are well deserved. In the photographic and artistic worlds he has made Effingham famous the world over.

He is the founder of both the colleges of photography and engraving established at Effingham. These institutions of learning attract students from every part of the world. Through the enterprise and well-directed energies of Mr. Bissell they have become widely and favorably known wherever photography and art are held in esteem. We predict that Effingham will honor itself in honoring one who has so honored Effingham in the past.

WE call the attention of our readers to the advertisement of the Yale & Towne Mfg. Co. on another page. Besides many other things which are wanted in every household, this firm manufactures the Blount Door Check. While this is useful wherever there is a door to be closed, every photographer should have one on his dark-room door. He will then be sure that a chance forgetfulness will not lead him to open a box of plates with two inches of daylight shining through a door carelessly left ajar. You may get a story-book by sending a stamp. Please do it.

THE Boston & Albany R. R. has been fortunate enough to secure the interest of Mr. J. Horace McFarland, President of the American Civic Association, Harrisburg, Pa., to the extent of making a series of photographs of its station grounds, showing the shrubbery in foliage and a few flowering shrubs in bloom; and Mr. Frank A. Arnold, General Manager of *Suburban Life*, of Boston, Mass., has written an article, appearing in the May number of that publication, entitled "A Study in Railroad Gardening," illustrated with Mr. McFarland's photographs. This is probably the best illustrated presentation of this feature of the railroad's work that has yet been given; and it has therefore been reproduced in pamphlet form, a copy of which may be obtained by any one who cares to make application to A. S. Hanson, General Passenger Agent, South Station, Boston, Mass.

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